University of Pécs
Medical School

DENTISTRY
Major

STUDY PROGRAM
2017/2018

Elective and Optional subjects
### 1st Semester

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<td>OSE-MSI</td>
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<td>OSE-CBR</td>
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<td>Orthodontics 1 - Practice</td>
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<td>Orthodontics 2 - Practice</td>
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<td>OSF-SUB</td>
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### 9th Semester

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<td>OSE-G3F</td>
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<td>OSF-SUO</td>
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OSE-ANT

Behavioral Science 1 (Medical Anthropology)

Course director: Dr. Árpád Csathó, associate professor
Department of Behavioural Sciences

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

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

Course headcount limitations (min.-max.): 5 – 300

Prerequisites: none

Course

Medical Anthropology can shortly be described as a subfield of anthropology that draws upon psychological, cultural, and biological anthropology to better understand those factors which influence human health and well-being. Within this scope, there are many different conceptual approaches, and one of these, the adaptational or ecological approach, receives a special focus during the course. Thus, the discussion of the course topics put an emphasis on the three different mechanisms of adaptation acquired by individuals to adapt to an environment: the biological, cultural and psychological adaptations. By attending the course, students will understand the basic concepts of medical anthropology, and acquire knowledge about the interactions between the many different influential factors (e.g. biological and cultural factors) of human health and behavior.

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
  Available on Neptun
- Notes
- Recommended literature
  Donald Joralemon: Exploring Medical Anthropology, Allyn and Bacon, 1999
  Tony McMichael: Human Frontiers, Environments and Disease, Cambridge, Univ. Press, 2001

Lectures

1. The subject and subfields of medical anthropology. Health concepts.
   Dr. Csathó Árpád
2. The concept of adaptation and plasticity in medical anthropology.
   Dr. Csathó Árpád
   Dr. Csathó Árpád
4. Stress as a bio-cultural interaction.
   Dr. Csathó Árpád
   Dr. Csathó Árpád
6. Placebo-nocebo effects. The anthropology of the drug effects.
   Dr. Csathó Árpád
7. Mortality and the basic concepts of demography.
   Dr. Csathó Árpád
8. The concepts of death. The development of the death belief in childhood.
   Dr. Csathó Árpád
   Dr. Csathó Árpád
10. Human nutrition in a biocultural context.
    Dr. Csathó Árpád
11. The interactions of environmental and biological factors on physical development. The concept of secular trends.
    Dr. Csathó Árpád
12  The anthropology of human aging.
    Dr. Csathó Árpád
13  The types of the environment, gene-environment interactions.
    Dr. Csathó Árpád
14  Philosophical anthropology.
    Dr. Szolcsányi Tibor

Practices

Seminars

Exam topics/questions

Exams are organized during the exam period on the days announced well in advance. The exam has two parts organized one after the other on the same day: a short written part followed by an oral part. On each exam day, first, the students need to write a short test having about 20 simple-choice test questions, lasting about 20 minutes. The questions in the test are related to the topics listed below. The test writing will be immediately followed by the oral part of the exam. During the oral part the students are required to discuss two of topics with examiner extensively. The final grade received by the students is calculated based on the written and the oral grades.

1. Interpretation of the different concepts of health.
2. The classification of the adaptation processes based on their mechanisms and the time constrain (i.e. duration).
3. Explanation of acclimatization with examples.
4. Explanation of cultural adaptation with examples.
5. Main methods to investigate adaptation processes to urban environment.
6. Explanation of acculturation with examples.
7. The description of the main stages of cultural shock with examples.
10. Differences in pain quality and pain duration: phasic vs. tonic pain, acute vs. chronic pain.
11. The microcontextual and the macrocontextual elements of the total drug effect.
12. Definition of placebo and nocebo effects with examples.
14. The main stages of the concept of death in childhood.
15. The concept of the secular trends. The effects of the biological and cultural factors on the development of the positive and negative secular trends.
16. The biocultural background of eating disorders.
OSE-BFA  PHYSICAL BASIS OF BIOPHYSICS

Course director:  DR. EMŐKE BÓDIS, assistant professor
Department of Biophysics

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

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

Course headcount limitations (min.-max.):  5 – 100  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).
- 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
4  Conservation of momentum. Collisions
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  Radioactivity
23  Radiations (radioactive, electromagnetic)
24  Electromagnetic waves
25  Radiation-matter interaction
26  Special radiation-matter interactions
27  Test writing
28  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.

Participants

Dr. Szabó-Meleg Edina (MEEDAA.T.JPTE), Dr. Talián Csaba Gábor (TACRAAO.PTE), Kollár Veronika Tünde (KOVGACT.PTE), Leipoldne Víg Andrea Teréz (VIAFAAO.PTE), Szatmári Dávid (SZDHAAT.PTE), Tóth Mónika Ágnes (TOMIAAT.PTE)
OSE-BO1  Biophysics Seminars 1

Course director: DR. ANDRÁS SZILÁRD LUKÁCS, associate professor
Department of Biophysics

1 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 1
Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 40  Prerequisites: OSA-BI1 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  Introduction
2  Diffusion
3  Osmosis. Fluid flow
4  Circulation. Cardiac biophysics. Protein folding
5  Resting membrane potential. Sensory receptors. Action potential
6  Vision. Hearing
7  Cytoskeleton. Motor proteins
8  Structure of striated muscle. Molecular basis of muscle function
9  Foundations of thermodynamics. Laws of thermodynamics
10  Thermodynamic potentials
11  The double nature of light. The structure of the atoms
12  Quantum numers. Spin. Molecular orbitals
13  Laser. X-ray
14  Test writing

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

Participants
Dr. Kengyel András Miklós (KEAFACO.PTE), Dr. Szabó-Meleg Edina (MEEDAA.T.JPTE), Futó Kinga (FUKIAAT.PTE), Huber Tamás (HUTEAB.T.JPTE), Kollár Veronika Tünde (KOVGACT.PTE), Szatmári Dávid (SZDHAAT.PTE)
OSE-ELS  FIRST AID

Course director:  DR. LAJOS BOGÁR, professor
Department of Anaesthesiology and Intensive Therapy

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

Number of hours/semester:  0 lectures + 14 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.):  1 – 250  Prerequisites:  none

Topic

Short description of the curriculum:
The first year students are expected to learn the basic elements of the emergency treatment and the methods of life saving interventions during the 14 class practice. The teaching will provide enough skill training for recognizing the signs of cardiac and breathing arrests and for performing the steps of basic life support interventions. Furthermore, the students are also expected to learn how to avoid life threatening secondary complications in accident victims on the scene and during transportation as well as in the emergency room. They will have to properly diagnose and help patients with acute chest pain, severe poisoning, metabolic disorders and acute central nervous diseases. The students are also expected to properly deal with acute airway obstructions using different first aid maneuvers.

Goals of the course in relation to the medical curriculum:
The discipline has two major goals. First: the students will have to be able to provide first aid to patients in acute illness in out-of-hospital settings. Second: the student being at the beginning of their medical curriculum should receive practical information reflecting the importance of the preclinical disciplines. In this way the students’ interest will hopefully rise towards the theoretical subjects and they can understand the scientific connections between basic and applied medical sciences.

Conditions for acceptance of the semester

The maximal absences are 20% of the practice time.

Mid-term exams

Making up for missed classes

The student can join other group for the supplementation.

Reading material

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

Lectures

Practices
1  1. Principles of basic life support (first aid in life threatening emergencies, ABC of resuscitation, indications, methods of external cardiac compression, skill).
2  1. Principles of basic life support (first aid in life threatening emergencies, ABC of resuscitation, indications, methods of external cardiac compression, skill).
3  2. First workout of the elements of basic life support.
4  2. First workout of the elements of basic life support.
5  3. Acute chest pain syndromes (acute myocardial infarction, etc.)
6  3. Acute chest pain syndromes (acute myocardial infarction, etc.)
9  5. Severe poisoning.
10  5. Severe poisoning.
11  6. Dangerous metabolic abnormalities, airway obstructions, acute central nervous
12  6. Dangerous metabolic abnormalities, airway obstructions, acute central nervous
13  7. Second workout of the elements of basic life support.
14  7. Second workout of the elements of basic life support.
Seminars

Exam topics/questions

Participants

Dr. Báta István (BAIMABO.PTE), Dr. Csontos Csaba (CSCSAAP.PTE), Dr. Jáksó Krisztián (JAKFAAO.PTE), Dr. Kiss Tamás (KITFAAO.PTE), Dr. Loibl Csaba (LOCGAAO.PTE), Dr. Molnár Tihamér (MOTTAA0.PTE), Dr. Nagy Bálint János (NABGAAO.PTE), Dr. Nagy Judit (NAJFAAO.PTE), Dr. Szabó Péter (SZPFABO.PTE), Dr. Szabó Zoltán (SZZUABO.PTE), Dr. Toldi János (TOJFADO.PTE), Dr. Tóth Ildikó (TOISAAA.PTE), Dr. Tóth Krisztián (TOKFAEO.PTE)
OSE-H1A  Medical Hungarian 1A - Communication Skills

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

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

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

Course headcount limitations (min.-max.): 3 – 25  Prerequisites: OSE-H1B 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
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 in each individual case.

Reading material
- Obligatory literature
- Literature developed by the Department
  In-house course book: at the homepage of the institute:
- Notes
- Recommended literature

Lectures
Practices
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 Nutritional History Taking
11 Nutrients
12 Nutrients
13 Consolidation
14 Test 1
15 Health Preservation, Sports, Addictions
16 Health Preservation, Sports, Addictions
17 Writing CV, occupation, work
18 Medical Specialties, Consulting Room and Ward
19 Medical Specialties, Consulting Room and Ward
20 Telling CV, family relations
21 Introducing family
22 Introducing family
23 Describing people - Internal and external features
24 Describing people - Internal and external features
25 Health care institutions, consolidation
26 Health care institutions, consolidation
27 Test 2
28 Course Evaluation
Seminars

Exam topics/questions

Two written test papers and oral presentations

Participants

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Eklicsné Dr. Lepenye Katalin (EKLAXA.B.JPTE), Hamarné Savay Judit (HASMAAO.PTE), Hild Gabriella (MAGAAD.B.JPTE), Horváth Lilla Anita (HOLFABP..PTE), Kúrdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Szántóné Dr. Csongor Alexandra (CSAAAA.B.JPTE), Tóth Ida (TOIHABE.PTE), Várádi Katalin (VAKHAAE.PTE)
**OSE-H1B**  **MEDICAL HUNGARIAN 1B - LANGUAGE POINTS**

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

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

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

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

**Prerequisites:** OSE-H1A parallel

**Topic**

Familiarizing foreign students with basic paradigms used in specific conversations.

**Conditions for acceptance of the semester**

Participation in class work is obligatory. In case absences exceed 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

**Reading material**

- Obligatory literature
- Literature developed by the Department
  

- Notes
- Recommended literature

**Lectures**

**Practices**

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. Objective Case
19. Verbal prefixes
20. Verbal prefixes
21. Expressing Time
22. Expressing Time
23. Expressing Location - Trinity of Directions
24. Expressing Location- Trinity of Directions
25. Dative Case
26. Dative Case
27. Test 2
28. Course Evaluation
Seminars

Exam topics/questions

- 

Participants

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Eklicsné Dr. Lepenye Katalin (EKLAXA.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Hild Gabriella (MAGAAD.B.JPTE), Horváth Lilla Anita (HOLFABP..PTE), Kürdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Molnár Annamária (MOAF-AC.B.JPTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Szántóiné Dr. Csongor Alexandra (CSAAAA.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
**OSE-MET BIOMETRICS**

**Course director:**

DR. LÁSZLÓ PÓTÓ, associate professor

Institute of Bioanalysis

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

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

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

Prerequisites: none

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**Topic**

As a first course in statistics it covers the following main blocks: Basic data handling and computer use. Exploring data by graphical and numerical characterization. Basic concepts of probability and statistical inference. The basic methods for statistical inference most frequently used in medicine.

As the main goal it focuses on the power of „statistical thinking” that is new to students and increasingly important at medical field - not only in the science but also in everyday work at the bedside. So we introduce students to the basics of Medical Decision Making.

**Conditions for acceptance of the semester**

At least two written in-semester test (all passed), no more than two missed classes.

There is a three-steps exam for the grade: an entry-test, a problem to be solved by the computer (using SPSS) and two theory questions. All the three should be completed at least ‘satisfactory’ for a successful exam. Failed at any steps results a failed exam.

The list of the theory questions is attached below.

**Mid-term exams**

At least two written in-semester test, min 50% result for each is needed for taking the final semester exam.

One in-semester test can be re-taken if failed.

**Making up for missed classes**

Extra class

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**

- **Notes**


- **Recommended literature**

  
  and:


  or


**Lectures**

1. Introduction (Statistics in medicine, models). Probability.
   Dr. Pótó László

2. Variables, Discrete distributions (binomial and Poisson).
   Dr. Pótó László

3. Continuous variables. Histogram, relative frequency density and probability density function.
   Dr. Pótó László

4. Mean and standard deviation. The normal distribution.
   Dr. Pótó László

5. Distribution of the sample mean, standard error.
   Dr. Pótó László

6. Confidence interval for the expected value. The t distribution
   Dr. Pótó László

7. Principle of hypothesis testing. The one sample and the paired samples t tests. The sign test (preview).
   Dr. Pótó László
The confidence interval and the hypothesis testing. Type I and type II errors. MDM basics 1.
Dr. Pótó László

The independent samples t test. The F test.
Dr. Pótó László

Linear regression and correlation.
Dr. Pótó László

Contingency tables 1. The chi-squared test.
Dr. Pótó László

The non-parametric tests (sign test, Wilcoxon and Mann-Whitney tests).
Dr. Pótó László

The principle of the ANOVA. Summary of the hypothesis testing methods.
Dr. Pótó László

Medical tests. Sensitivity and specificity. (Contingency tables 2.) MDM basics 2. Summary.
Dr. Pótó László

Practices
1. Probability examples 1. + Using computers, Windows, SPSS.
2. Probability examples 2 - discrete distributions.
3. The binomial distribution.
5. Exploring data by numbers - descriptive statistics
7. Estimations. The confidence interval of the expected value.
8. The hypothesis testing - the ‘five steps’. The one sample (and the paired samples) t tests. The sign test.
9. Estimation and hypothesis testing. The Type one and Type two errors.
10. The independent samples t test.
11. The linear regression and correlation.
13. Nonparametric tests (Sign test, Wilcoxon tests, Mann-Whitney test)
14. Summary

Seminars

Exam topics/questions

On the main semester exam: A written entry test, one data analysis problem solved by the SPSS and two theory questions from the below list. One of them is out of the MDM questions.

MDM-1 Medical Decision Making - basic principles 1
Demonstrate please the application of statistical decision making terms and principles (Ho, Type-1 and 2 error risks, change the alpha decision borderline, ...) to a simple medical or any everyday life decision making situation.
Use your calculation exam problem or select your own problem for demonstration.
(Mainly from the lecture 8)

MDM-2 Medical Decision Making - basic principles 2
Demonstrate please the application of statistical decision making terms and principles (clinical evidences, probabilities, treatment borderline, further examination options, ...) to a simple medical decision making situation.
Use your calculation exam problem or select your own problem for demonstration.
(Mainly from the lectures 13-14)

1. The main goal of biometrics/biostatistics
   Compare the two models - what are the main differences?
   Relate them and show how they both have its role in the scientific work and in medicine.
   (Mainly from the lectures 1, 3, and 6-7-8)

2. The key feature of the statistical thinking - the probability
   Show this term - use a simple example, please. When can it be (and when can not be) calculated? Illustrate how both ways can be used in practical medical situations - by some examples.
   (Mainly from the lectures 1, 2, 6-7-8 and 12)

3. The idea of the probability distribution - discrete distributions - 1,
   Demonstrate on the example of the binomial distribution how the probability calculations (games of chances case) can be used in real life situations. How can you illustrate a distribution (graphically). Trace its role on the decision making.
   (Mainly from the lectures 2, 6-7-8 and 12)
4. The idea of the probability distribution - discrete distributions - 2.  
Contrast the binomial and the Poisson distributions; similarities and differences - demonstrated by some examples. Show the importance of discrete distributions through examples. (Which hypothesis testing methods are based on this approximation?)  
(Mainly from the lectures 2, 6-7-8 and 12)

5. The basic principles of statistical thinking - from the data to the decision  
The way to the decision - and some pitfalls. (Size of the sample, representativity, lurking variables, probability decision, risk of errors, - and handling them)  
(Mainly from the lectures 3 and 6-7-8)

6. Types of the data (variables) and displaying them with graphs  
The three most frequent types of data and the methods for summarizing and displaying them.  
Applications of some diagrams - strength and weaknesses. What specific info can be observed from a given type of graph? When to choose a given type?  
(Mainly from the lecture 3 and 10)

7. The population and the sample  
Explain both terms in case of some different types of data. How to characterize (by pictures or numbers) the sample and the population in these examples? Discuss the basic role of both terms in the statistical inference and decision making  
(Mainly from the lectures 2, 3, 6-7-8 and 12)

8. Numerical description of continuous data  
Contrast the “five number” and “three number” descriptions. When to use one and when the other?  
Prove and demonstrate by examples the basic role of the two description while selecting the appropriate decision making (or hypothesis testing) method.  
(Mainly from the lectures 4, 6-7-8 and 12)

9. The idea of the probability distribution - continuous distributions  
Symmetrical and skewed distributions. How the measures of the sample show (mirror) the shape of the distribution? Demonstrate them on the example of the normal and some skewed distributions. Prove the importance of distinction between them (think to the condition of the decision making methods).  
(Mainly from the lectures 4, 6-7-8 and 12)

10. The normal distribution  
Features. Why is it so frequently used in biology and medicine?  
Application examples (reference range, ...).  
How does the “normal approximation” method demonstrate its importance (application examples) ... and how does the conditions of the hypothesis testing methods?  
(Mainly from the lectures 4, 5, 6-7-8 and 12)

11. The normal distribution 2  
How the “distribution of the mean” shows its importance? Verify the basic role of the “distribution of the mean” while statistical inference and decision making.  
(Mainly from the lectures 4, 5, 6-7-8-9-10)

12. Statistical inference  
The statistical inference is the main goal (final step) of the statistical thinking. Contrast the point- and the interval estimation from this point of view. Trace both methods (and the use of them) on the example of the confidence interval for the expected value (the p% CI of the expected value).  
(Mainly from the lectures 5 and 6)

13. The confidence interval of the population mean  
You can find the “95% CI” on most of the SPSS output (that you learned). What is that and why can you meet it so frequently at statistical analysis? Give examples of results screens (methods): why is it included in the given method - what is the use of it there?  
(Mainly from the lectures 5 and 6 - and all the lectures from then)

14. The basic idea of hypothesis testing  
Prove the relevance of the “five steps” method - and demonstrate it on everyday and medical examples. What are the simple given steps of the “five” and those that are require personal evaluation from case to case? Discuss these later ones on examples.  
(Mainly from the lectures 7 - and all the lectures from then)

15. The one sample and the paired t test  
At what kind of data (-structure) should you use this method? When hypothesis testing? Relate the two methods to each other. What can be done when the application conditions do not fit? Why not use these later methods at all the situations than?  
(Mainly from the lectures 6-7-8-9 and 12)

16. The confidence interval and the hypothesis testing  
Contrast the two methods: similarities and differences - strength and weaknesses.  
Demonstrate your evaluation on examples.  
(Mainly from the lectures 6-7-8)
17. The risk of errors and the power of a test
Discuss the essential feature of the statistical decisions the risk of errors. How can you handle these risks? When should you handle these risks?

Explain on examples: when can you use the value of the risk of a certain error and when to use the power of the test? (Which questions call for this kind of answers?)
(Mainly from the lectures 8 and 9)

18. The two (independent) samples t test
Contrast the paired and independent samples t tests? What are the typical questions which call for the later method? What is the specific requirement (condition) of this method - and how can you handle this with the help of the F test?
(What should we “pay for” that solution? Why not to use always the solution which has less requirements?)
(Mainly from the lecture 9)

19. Connection between two variables - continuous variables
Contrast the “one variable - two samples” and the “two variables” - paired data (“one sample”)? Cases. What are the typical questions in the two cases?
Use examples to explain the method of the linear regression and correlation analysis. Stress the steps where there is an obvious role of statistical thinking.
Is this method a hypothesis test?
(Mainly from the lecture 10)

20. Connection between two variables - categorical variables
Relate to each other the “two variables” methods for continuous and categorical variables - similarities and differences. Which numbers are to be evaluated in the later case?
Which hypothesis testing method(s) are available for that? Explain the five steps on an example. What are the conditions for applying the method(s) and what to do when those conditions are not valid?
(Mainly from the lectures 11 and 12)

Why the chi-squares test is not applicable in the medical practice frequently? What to do then? When to use the Fisher’s exact test - out of those cases? What the “exact” word means in the name?
(Mainly from the lectures 11 and 12)

How to qualify a diagnostic test? Which questions can be answered by the ‘sensitivity’, ‘specificity’ and the ‘predictive value(s)’ of the test?
The confidence interval for the proportion. Explain (using the previous term) why the chi-squares test gives ‘not significant’ result at evaluations of medical data frequently.
(Mainly from the lectures 11 and 12)

23. Nonparametric tests - 1.
When to refuse the application of a t test - and when to apply the sign test instead? Demonstrate the ‘five steps’ on an example using the sign test. Contrast this method and the appropriate ‘parametric’ one? What are the strength and weaknesses of this method?
(Mainly from the lectures 2, 7 and 12)

When to refuse the application of a t test - and when to apply the Wilcoxon and the Mann-Whitney test instead? Demonstrate the application of both tests on examples. Contrast these methods and the appropriate “parametric” ones? What are the strength and weaknesses of these methods?
(Mainly from the lectures 2, 9 and 12)

25. The principle of the ANOVA
Demonstrate the application of the ANOVA method on an example
What is the basic idea of the evaluation? Illustrate it on the case of comparing several group means simultaneously.
What is the strength of this method in contrast to the several t tests for pairs of groups?
(Mainly from the lectures 2, 8, 9 and 13)

Participants
Dr. Dergez Timea (DETCAAT.T.JPTE), Dr. Kilár Ferenc (KIFGAAO.PTE), Dr. Pótó László (POLGABO.PTE), Kőnigné Péter Anikó (PEAAAB.T.JPTE)
OSE-MS1  
**EXPERIMENTS IN MOLECULAR CELL BIOLOGY 1**

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

<table>
<thead>
<tr>
<th>2 credit</th>
<th>midsemester grade</th>
<th>Elective subject</th>
<th>autumn semester</th>
<th>recommended semester: 1</th>
</tr>
</thead>
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Number of hours/semester:  
14 lectures + 0 practices + 14 seminars = total of 28 hours

Course headcount limitations (min.-max.):  
5 – 80  
Prerequisites: none

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**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**

Making up for missed classes

None.

**Reading material**

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

### Lectures

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

Practices

Seminars

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

Exam topics/questions

Multiple-choice test.

Participants

Dr. Bátor Judit (BAJFAAO.PTE), Dr. Pap Marianna (PAMFAAO.PTE), Kiss Katalin (KIKFABO.PTE), Schipp Renáta (SCRDAA.T.PTE), Varga Judit (VAJGACT.PTE)
OSE-MZ1  
**MOLECULAR CELL BIOLOGY SEMINAR FOR STUDENTS OF DENTISTRY 1**

Course director: GYÖRGY SÉTÁLÓ JR., associate professor  
Department of Medical Biology

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

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

Course headcount limitations (min.-max.): 5 – 25  
Prerequisites: OSA-MB1 parallel

**Topic**

Goal is the discussion of the material covered by/following the lectures of the compulsory subject MOLECULAR CELL BIOLOGY 1, in small groups and in an interactive way.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

Two mid-term tests of the multiple-choice question type, one on the seventh, the other on the last week of the semester (30-30 questions).

**Making up for missed classes**

It is not possible to make up for missed classes.

**Reading material**

- **Obligatory literature**
  - Literature developed by the Department
    Szeberényi, J., Komáromy, L.: Molecular Cell Biology Syllabus
  - **Notes**
  - **Recommended literature**
    Gerald Karp: Cell and Molecular Biology
    Lodish et al.: Molecular Cell Biology
    Alberts et al.: Molecular Biology of the Cell
    Szeberényi J.: Experiments in Molecular Cell Biology

**Lectures**

**Practices**

**Seminars**

1. Cellular organization in general
2. Nucleic acids
3. Proteins
4. Lipids and carbohydrates
5. Light and electron microscopy
6. Restriction endonucleases and modification methylases
7. DNA amplification in vitro and in vivo
8. DNA sequencing and gene-manipulated organisms
9. Chip technology and the organization of the genome
10. Nucleus
11. Chromatin
12. Cell cycle
13. DNA synthesis
14. DNA repair
15. RNA synthesis
16. RNA processing
17. Cytoplasmic organelles
18. The genetic code
19. Protein synthesis
20. Bacterial operons
21. Gene regulation in eukaryotes
Exam topics/questions

See the test question banks of the department!

Participants

Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Bátor Judit (BAJFAAO.PTE), Dr. Berta Gergely (BEGFADO.PTE), Dr. Fekete Zsuzsanna (FEZAAB.TJ.PTE), Dr. Kemény Ágnes (KEAAAA.TJ.PTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Tarjányi Oktávia (TAOGAO.PTE), ifj. Dr. Sétálo György (SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE), Németh Mária (NEMGAAT.PTE), Varga Judit (VAJGACT.PTE)
**OSE-N06 MEDICAL TERMINOLOGY**

**Course director:**
Gabriella HÁBEL, language teacher
Department of Languages for Specific Purposes

<table>
<thead>
<tr>
<th>2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 1</th>
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<tr>
<td><strong>Number of hours/semester:</strong> 14 lectures + 0 practices + 14 seminars = total of 28 hours</td>
</tr>
<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 5 – 250</td>
</tr>
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<td><strong>Prerequisites:</strong> none</td>
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</table>

**Topic**

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

**Conditions for acceptance of the semester**

Maximum of 15% absence allowed

**Mid-term exams**

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

**Lectures**

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

Seminars

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

Exam topics/questions

Participants

Hábel Gabriella (HAGTAAP.PTE)
OSE-OET  Behavioral Science 2 (Medical Ethics)

Course director: Dr. Zsuzsanna Füzesi, professor
Department of Behavioural Sciences

<table>
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<th>1 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 1</th>
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<tr>
<td>Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours</td>
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<td>Course headcount limitations (min.-max.): 5 – 250</td>
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<td>Prerequisites: none</td>
</tr>
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</table>

Topic

The course helps the students gain sensitivity regarding the ethical aspects of medical practice, and to become aware of the different ethical approaches. The main aim of the course is to assist the students in developing their own ethical attitudes.

Conditions for acceptance of the semester

Maximum of 15% 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
  - Course materials: Neptun Meet Street
- Notes
- Recommended literature

Lectures

Practices

Seminars

1. The differences between traditional medical ethics and modern bioethics
2. The main moral theories
3. The most fundamental ethical principles of healthcare profession. Medical confidentiality
4. The principle of medical informed consent
5. Problems in the care of the terminally ill
6. Problems in the care of the terminally ill
7. The moral status of abortion
8. The ethics of organ and tissue transplantation
9. Ethical issues raised by reproductive medicine
10. Ethical issues raised by reproductive medicine
11. The placebo effect
12. Ethical issues raised by genetic interventions
13. Summarizing discussion
14. Written test

Exam topics/questions

Additional materials: Neptun Meet Street

Participants

Dr. Szolcsányi Tibor (SZTAJ.B.JPTE)
OsE-OTT  

**HISTORY OF MEDICINE**  

*Course director: Dr. Csilla Rúzsás, associate professor*  

**Department of Operational Medicine**  

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

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

**Course headcount limitations (min.-max.):** 5 – 80  

**Prerequisites:** none  

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**Topic**  

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

Since the students of our University come from countries of different cultures and traditions, the progress in medicine of 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
The most outstanding physicians of Arabic-Islamic medicine
Dr. Rúzsás Csilla

Foundation of the universities in the Middle-Age
Dr. Rúzsás Csilla

Scholastic medicine
Dr. Rúzsás Csilla

Medicine in the Renaissance
Dr. Rúzsás Csilla

Vesal. Paracelsus.
Dr. Rúzsás Csilla

Medicine of the 17th century: the golden age of sciences
Dr. Rúzsás Csilla

Rise of natural sciences. Iatrophysics and iatrochemistry
Dr. Rúzsás Csilla

The age of the 18th century
Dr. Rúzsás Csilla

The age of enlightenment. Progress in pathology.
Dr. Rúzsás Csilla

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

Medical schools in Europe
Dr. Rúzsás Csilla

Specialisation in medicine in the 19th century
Dr. Rúzsás Csilla

New approaches and equipment in medicine of the 19th century
Dr. Rúzsás Csilla

Medicine in the first half of the 20th century
Dr. Rúzsás Csilla

Results of Nobel-Prize winners in medicine
Dr. Rúzsás Csilla

Main trends in medicine in the second half of the 20th century
Dr. Rúzsás Csilla

Molecular biological methods in modern medicine and related problems
Dr. Rúzsás Csilla

The history of the University of Pécs
Dr. Rúzsás Csilla

Relations with prominent European scientists
Dr. Rúzsás Csilla

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 epidemies 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.
Participants
OSF-BAL  MINERAL AND SPA WATERS, BALNEOLOGY
Version: 2017/2018

Course director: DR. Csaba Varga, associate professor
Department of Public Health Medicine

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

Exceptionally in the academic year of 2017/2018 it will be held in the spring semester!

Number of hours/semester:
28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 5 – 0
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
   Dr. Varga Csaba
2  Hydrogeology of Hungarian mineral and spa waters
   Dr. Varga Csaba
3  Correlation of the geological characteristics and the chemical composition
   Dr. Varga Csaba
4  Hydrology of mineral and spa waters
   Dr. Varga Csaba
5  Mineral and spa waters in Hungary and Europe
   Dr. Varga Csaba
6  Chemical characteristics of mineral and spa waters
   Dr. Varga Csaba
7  Inorganic analytical classification
   Dr. Varga Csaba
8  Presence of microelements
   Dr. Varga Csaba
9  Inorganic ions, substances and complexes in the therapeutical effect
   Dr. Varga Csaba
10  Organic ions, substances and complexes in the therapeutical
    Dr. Varga Csaba
11  In situ water analysis
    Dr. Varga Csaba
12  Inorganic analysis
    Dr. Varga Csaba
13  Hygienic microbiological analysis
    Dr. Varga Csaba
14  Artificial mineral and medicinal waters
    Dr. Varga Csaba
Peloids: genesis, chemical/physical/toxicological properties. Hungarian peloids.
Dr. Varga Csaba

Mineral and spa water products
Dr. Varga Csaba

Introduction to Balneology: objectives and history
Dr. Varga Csaba

Water and ions in the human body
Dr. Varga Csaba

External cure with spa waters, mode of action
Dr. Varga Csaba

Mechanic, thermal, chemical and psychic actions, Spa reaction.
Dr. Varga Csaba

Water types in cure
Dr. Varga Csaba

Application of spa waters to different diseases
Dr. Varga Csaba

Therapeutic applications of peloids
Dr. Varga Csaba

Internal use of mineral and medicinal waters. Drinking cure
Dr. Varga Csaba

Inhalation cure
Dr. Varga Csaba

Other natural cures: climate cure, physiotherapy, additional therapies
Dr. Varga Csaba

Exam
Dr. Varga Csaba

Exam
Dr. Varga Csaba

Practices

Seminars

Exam topics/questions

Neptun

Participants
**OSF-BBM**  
**INTRODUCTION TO BIOMETRICS**  
*Course director:*  
**DR. LÁSZLÓ PÓTÓ, associate professor**  
*Institute of Bioanalysis*

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

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

**Course headcount limitations (min.-max.):**  
1 – 20  
**Prerequisites:** none

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**Topic**

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

**Conditions for acceptance of the semester**

Active participation at the classes; maximum one missed class.

**Mid-term exams**

Making up for missed classes

One extra class

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
  
László Pótó: Biometrics, workbook, Pécs, 2016

- **Recommended literature**

  and

**Lectures**

**Practices**

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

**Seminars**

**Exam topics/questions**

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

**Participants**

Dr. Pótó László (POLGABO.PTE)
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/practice. In case of absence there can be a personal consultation.

Making up for missed classes

Personal consultation for good cause.

Reading material

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

Lectures

1 Definition of Biomarkers
   Dr. Gyöngyi Zoltán
2 Biomarkers of Environmental and Occupational Harm
   Dr. Gyöngyi Zoltán
3 Biomarkers of Smoking
   Dr. Gyöngyi Zoltán
4 Alcohol and Drug Use Biomarkers
   Dr. Gyöngyi Zoltán
5 Biomarkers of Nutritional Status
   Dr. Gyöngyi Zoltán
6 Biomarkers of Physical Activity
   Dr. Gyöngyi Zoltán
7 Biomarkers of Genetic Diseases
   Dr. Gyöngyi Zoltán
8 Epigenetic Biomarkers
   Dr. Gyöngyi Zoltán
9 Cardiovascular Disease Biomarkers
   Dr. Gyöngyi Zoltán
10 Cancer Biomarkers
    Dr. Gyöngyi Zoltán
11 Biomarkers of Infectious Diseases
   Dr. Gyöngyi Zoltán
12 Volatile Molecules as Biomarkers
   Dr. Gyöngyi Zoltán
13 Volatile Molecules as Biomarkers
   Dr. Gyöngyi Zoltán
Validation of Biomarkers. Ethical Questions
Dr. Győngyi Zoltán

Exam topics/questions
Definition of Biomarkers
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

Participants
Dr. Gyöngyi Zoltán (GYZMAAO.PTE)
<table>
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<tr>
<th>OSF-CBR</th>
<th>MEDICAL ASPECTS OF CBRN (CHEMICAL, BIOLOGICAL, RADILOGICAL AND NUCLEAR) WARFARE</th>
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<tbody>
<tr>
<td>Course director:</td>
<td>DR. TAMÁS MOLNÁR F., professor</td>
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<tr>
<td>Department of Operational Medicine</td>
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</table>

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

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

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

Prerequisites: none

**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

Making up for missed classes

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  
   Dr. Molnár F. Tamás
3. Basics of Biophysics and Biochemistry  
   Dr. Molnár F. Tamás
4. Basics of Biophysics and Biochemistry  
   Dr. Molnár F. Tamás
5. Basics of Physiology  
   Dr. Molnár F. Tamás
6. Basics of Physiology  
   Dr. Molnár F. Tamás
7. CBRN Agents and Their Terminology. Classification. Concerning International Regulations  
   Dr. Maróti Péter Dezső
8. CBRN Agents and Their Terminology. Classification. Concerning International Regulations  
   Dr. Maróti Péter Dezső
9. Introduction of the Harmful Effects Caused by Chemical Materials  
   Dr. Maróti Péter Dezső
10. Introduction of the Harmful Effects Caused by Chemical Materials  
    Dr. Maróti Péter Dezső
11. Introduction of the Harmful Effects Caused by Biological Materials  
    Dr. Maróti Péter Dezső
12. Introduction of the Harmful Effects Caused by Biological Materials  
    Dr. Maróti Péter Dezső
| 13 | Introduction of Harmful Radiological Effects  
Dr. Maróti Péter Dezső |
| 14 | Introduction of Harmful Radiological Effects  
Dr. Maróti Péter Dezső |
| 15 | Introduction of Harmful Nuclear Effects  
Dr. Maróti Péter Dezső |
| 16 | Introduction of Harmful Nuclear Effects  
Dr. Maróti Péter Dezső |
| 17 | Basics of Radiation Protection. Definitions  
Dr. Maróti Péter Dezső |
| 18 | Basics of Radiation Protection. Definitions  
Dr. Maróti Péter Dezső |
| 19 | Complex CBRN Detection  
Dr. Maróti Péter Dezső |
| 20 | Complex CBRN Detection  
Dr. Maróti Péter Dezső |
| 21 | Acute Care I.  
Dr. Maróti Péter Dezső |
| 22 | Acute Care I.  
Dr. Maróti Péter Dezső |
| 23 | Acute Care II.  
Dr. Maróti Péter Dezső |
| 24 | Acute Care II.  
Dr. Maróti Péter Dezső |
| 25 | Practice  
Dr. Maróti Péter Dezső |
| 26 | Practice  
Dr. Maróti Péter Dezső |
| 27 | TEST  
Dr. Maróti Péter Dezső |
| 28 | TEST  
Dr. Maróti Péter Dezső |

Practices
Seminars
Exam topics/questions
Participants
<table>
<thead>
<tr>
<th>Course director:</th>
<th>Dr. István Kiss, professor</th>
</tr>
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<tr>
<td>Department:</td>
<td>Department of Public Health Medicine</td>
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</tbody>
</table>

**CANCER IS PREVENTABLE!**

- **Number of hours/semester:** 26 lectures + 0 practices + 2 seminars = total of 28 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**

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

**Lectures**

1. Cancer in the 21st century
   Dr. Kiss István
2. Cancer in developing and developed countries
   Dr. Kiss István
3. The process of carcinogenesis I
   Dr. Kiss István
4. The process of carcinogenesis II
   Dr. Kiss István
5. Characteristics of cancer cells
   Dr. Kiss István
6. Molecular epidemiology of cancer
   Dr. Kiss István
7. The most important cancer risk factors in general I
   Dr. Kiss István
8. The most important cancer risk factors in general II
   Dr. Kiss István
9. Lung cancer (development, risk factors, prevention) I
   Dr. Kiss István
10. Lung cancer (development, risk factors, prevention) II
    Dr. Kiss István
11. Colorectal cancer (development, risk factors, prevention) I
    Dr. Kiss István
12. Colorectal cancer (development, risk factors, prevention) II
    Dr. Kiss István
UP MS Dentistry major – Elective and Optional subjects - Course descriptions – academic year of 2017/2018

13 Breast cancer (development, risk factors, prevention) I
   Dr. Kiss István
14 Breast cancer (development, risk factors, prevention) II
   Dr. Kiss István
15 Prostate cancer (development, risk factors, prevention)
   Dr. Kiss István
16 Head and neck cancer (development, risk factors, prevention)
   Dr. Kiss István
17 Pancreatic cancer (development, risk factors, prevention)
   Dr. Kiss István
18 Gastric cancer (development, risk factors, prevention)
   Dr. Kiss István
19 Liver cancer (development, risk factors, prevention)
   Dr. Kiss István
20 Cervical cancer (development, risk factors, prevention)
   Dr. Kiss István
21 Ovarian cancer (development, risk factors, prevention)
   Dr. Kiss István
22 Skin cancer and melanoma malignum (development, risk factors, prevention)
   Dr. Kiss István
23 Leukemia (development, risk factors, prevention)
   Dr. Kiss István
24 Less frequent tumors (development, risk factors, prevention)
   Dr. Kiss István
25 Genetics, genomics and epigenetics in cancer prevention I
   Dr. Kiss István
26 Genetics, genomics and epigenetics in cancer prevention II
   Dr. Kiss István

Practices

Seminars
1 Recommendations I
2 Recommendations II

Exam topics/questions

Participants

Dr. Kiss István (KIIFAD.A.JPTE)
**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 3x45 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

**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**

1. Investigation of a food-borne outbreak I
2. Investigation of a food-borne outbreak II
3. Investigation of a food-borne outbreak III
Exam topics/questions

- Participants

Dr. Prantner Ida (PRIFAAO.PTE)
OSF-GFE  GLOBAL WARMING - THE HEALTH AND DISEASE IMPACTS

Course director: Dr. Gellért Gerencsér, assistant professor
Department of Public Health Medicine

2 credit • midterm grade • Optional subject • autumn semester • recommended semester: 1
Number of hours/semester: 24 lectures + 0 practices + 4 seminars = total of 28 hours
Course headcount limitations (min.-max.): 1 – 30
Prerequisites: none

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
10 Extreme weather intensification (hurricanes and floods). Triggered infectious diseases and chemical contamination.
    Bérczi Bálint Dániel
11 The indirect health effects I
    Bérczi Bálint Dániel
12 The changed dynamics of vector-borne diseases.
    Bérczi Bálint Dániel
13 The changed dynamics of zoonotic diseases.  
Bérczi Bálint Dániel

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

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

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

17 The indirect health effects III  
Bérczi Bálint Dániel

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

19 The indirect health effects IV  
Bérczi Bálint Dániel

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

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

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

23 Climate refugees and the upcoming environmental migration.  
Bérczi Bálint Dániel

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

Practices

Seminars

1 The adaptation of public health systems to climate change.  
2 Possible health care solutions. Public health scenarios.  
3 The accessibility of health services on a changing climate.  
4 Public health climate-programs.

Exam topics/questions  

Neptun

Participants  

Bérczi Bálint Dániel (BEBIABT.PTE)
**POISONOUS MUSHROOMS**

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

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

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

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

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 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**
  - [http://www.rogersmushrooms.com/](http://www.rogersmushrooms.com/)

**Lectures**

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

Practices

Seminars

Exam topics/questions

Oral exam including matters of poisonings, as well as recognizing the most important PMs and their edible counterparts
Cytotoxic MPs
Gastrointestinal MP
Muscarine-type of MP
Psychotropic MP
Other types of MP
Tasks of the general practitioner in case of MP

Participants
**OSF-HHE THE HEALTH ASPECTS OF WASTE MANAGEMENT**

Course director: DR. TIMEA VARJAS, assistant professor
Department of Public Health Medicine

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

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

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

**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 Waste management
   Dr. Szabó István
2 Life cycle of products, general health effects of waste
   Dr. Szabó István
3 Environmental effects of waste management, sensitive populations - world report
   Dr. Szabó István
4 Waste treatment - possible exposition sources
   Dr. Szabó István
5 Waste treatment - possible exposition sources
   Dr. Szabó István
6 Healthcare waste management
   Dr. Szabó István
7 Chemical safety and laboratory waste management
   Dr. Szabó István
8 Health effect of selected waste groups - toxic, mutagenic, corrosive
   Dr. Szabó István
9 Health effect of selected waste groups - flammable, radioactive
   Dr. Szabó István
10 Health effect of selected waste groups - Municipal and industrial
   Dr. Szabó István
11 Energy recovery from solid waste
   Dr. Szabó István
12 Recycling - focusing on environmental health
   Dr. Szabó István
Waste treatment and management in practice
Dr. Szabó István

Practices
Seminars
Exam topics/questions
Test from the lecture slides.
Participants
INNOVATIONS IN HEALTHCARE TECHNOLOGY

Course director: DR. MIKLÓS NYITRAI, professor
Department of Biophysics

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

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

Course headcount limitations (min.-max.): 5 – 200 Prerequisites: none

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  Introduction, famous innovators, leading medical technologies
   Dr. Nyitrai Miklós
3  Medical simulation education
   Dr. Varga Péter
4  Medical simulation education
   Dr. Varga Péter
5  3D printing in medicine (polymers, metals)
   Dr. Maróti Péter Dezső
6  3D printing in medicine (polymers, metals)
   Dr. Maróti Péter Dezső
7  Robotics in healthcare - robotic surgery, myoelectric prosthesis, assistive devices
   Dr. Maróti Péter Dezső
8  Robotics in healthcare - robotic surgery, myoelectric prosthesis, assistive devices
   Dr. Maróti Péter Dezső
9  Human-machine interface (HMI): human exoskeletons
   Dr. Maróti Péter Dezső
10  Human-machine interface (HMI): human exoskeletons
    Dr. Maróti Péter Dezső
11  Medical 3D visualization and image processing
    Dr. Nyitrai Miklós
12 Medical 3D visualization and image processing  
   Dr. Nyitrai Miklós
13 Innovative materials in healthcare („smart materials” biocompatible materials)  
   Dr. Maróti Péter Dezső
14 Innovative materials in healthcare („smart materials” biocompatible materials)  
   Dr. Maróti Péter Dezső
15 Electronic and mobile healthcare solutions (e-health / m-health)  
   Dr. Varga Péter
16 Electronic and mobile healthcare solutions (e-health / m-health)  
   Dr. Varga Péter
17 Innovative patient-care, patient management and infrastructure  
   Dr. Varga Péter
18 Innovative patient-care, patient management and infrastructure  
   Dr. Varga Péter
19 3D Bioprinting: tissue printing  
   Dr. Nyitrai Miklós
20 3D Bioprinting: tissue printing  
   Dr. Nyitrai Miklós
21 Innovation management in healthcare  
   Dr. Nyitrai Miklós
22 Innovation management in healthcare  
   Dr. Nyitrai Miklós
23 Artificial intelligence (AI) and „Big Data” in healthcare  
   Dr. Nyitrai Miklós
24 Site visit: PTE 3D Center and/or MediSkillsLab and/or Biomechanical Center  
   Dr. Nyitrai Miklós
25 Site visit: PTE 3D Center and/or MediSkillsLab and/or Biomechanical Center  
   Dr. Nyitrai Miklós
26 Test  
   Dr. Nyitrai Miklós
27 Test  
   Dr. Nyitrai Miklós

Practices
Seminars
Exam topics/questions
   Based on lectures
Participants
**OSF-KEF**  
**Physical Basis and Application of Medical Imaging Techniques**

**Course director:**  
DR. DÉNES LŐRINCZY, professor  
Department of Biophysics

<table>
<thead>
<tr>
<th>Credits</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:**  
28 lectures + 0 practices + 0 seminars = total of 28 hours

**Course headcount limitations (min.-max.):**  
1 – 36  
**Prerequisites:** none

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**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**

Making up for missed classes

**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**

   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
   Dr. Lőrinczy Dénes
7. The structure of electronmicroscope, its types, their working principle.  
   Dr. Lőrinczy Dénes
8. Laser tweezers.  
   Dr. Lőrinczy Dénes
   Dr. Lőrinczy Dénes
10. Fluorescence microscope.  
    Dr. Lőrinczy Dénes
11. Ultramicroscope.  
    Dr. Lőrinczy Dénes
    Dr. Lőrinczy Dénes
    Dr. Lőrinczy Dénes
14. X-ray image formation, summation effect, contrast, image amplification.  
    Dr. Lőrinczy Dénes
CT, two and three dimensional image formation, resolution.
Dr. Lőrinczy Dénes

PET, gamma camera.
Dr. Lőrinczy Dénes

Scintigraphy.
Dr. Lőrinczy Dénes

Principle of magnetic resonance, the NMR.
Dr. Lőrinczy Dénes

Principle of magnetic resonance imaging (MRI), limits of application.
Dr. Lőrinczy Dénes

Interpretation of TR, TE, T1 and T2, as well as their interrelationship.
Dr. Lőrinczy Dénes

Ultrasound, its medical and biological effects.
Dr. Lőrinczy Dénes

Ultrasound imaging.
Dr. Lőrinczy Dénes

Free consultation from the topics of course (discussion of any problem).
Dr. Lőrinczy Dénes

Free consultation from the topics of course (discussion of any problem).
Dr. Lőrinczy Dénes

Written test.
Dr. Lőrinczy Dénes

Written test.
Dr. Lőrinczy Dénes

Discussion of the test, final evaluation of the course.
Dr. Lőrinczy Dénes

Discussion of the test, final evaluation of the course.
Dr. Lőrinczy Dénes

Practices

Seminars

Exam topics/questions

Written test

Participants
Capillary Electrophoresis in Laboratory Diagnostics

Course director: Csilla Páger, assistant professor
Institute of Bioanalysis

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

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 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
Oral exam, maximum 2 absences
Mid-term exams
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
- Notes
- Recommended literature
  James Landers (ed.): Handbook of Capillary Electrophoresis, CRC Press, 1994

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

Seminars

Exam topics/questions

Discussion of practical questions after home work.

Participants
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

1. The concept, mission and goals of environmental protection.
   Dr. Varga Csaba
2. The environmental institutions and legislations.
   Dr. Varga Csaba
3. Background, missions and goals of IUCN.
   Bérczi Bálint Dániel
   Bérczi Bálint Dániel
   Dr. Varga Csaba
   Dr. Varga Csaba
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. The distribution of pollutants.
   Dr. Varga Csaba
10. Air pollution measurements.
    Dr. Varga Csaba
11. The qualitative and quantitative composition of surface waters.
    Bérczi Bálint Dániel
    Bérczi Bálint Dániel
<table>
<thead>
<tr>
<th>No.</th>
<th>Course Title</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>The qualitative and quantitative composition of underground waters.</td>
<td>Dr. Varga Csaba</td>
</tr>
<tr>
<td>14</td>
<td>Monitoring systems of underground waters.</td>
<td>Dr. Varga Csaba</td>
</tr>
<tr>
<td>15</td>
<td>Soil structure, soil types.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>16</td>
<td>The forms of soil pollution and their troubleshooting possibilities. Soil protection.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>17</td>
<td>The definition and types of waste. Selective waste collection.</td>
<td>Dr. Varga Csaba</td>
</tr>
<tr>
<td>18</td>
<td>Hazardous wastes. Waste management technologies.</td>
<td>Dr. Varga Csaba</td>
</tr>
<tr>
<td>19</td>
<td>The origin of waste waters, sewage sludges.</td>
<td>Bérczi Bálint Dániel</td>
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<tr>
<td>20</td>
<td>Wastewater treatments. Recovery of sewage sludges.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>21</td>
<td>The connection between environmental pollution and climate change.</td>
<td>Dr. Varga Csaba</td>
</tr>
<tr>
<td>22</td>
<td>Global warming effects on biodiversity.</td>
<td>Dr. Varga Csaba</td>
</tr>
<tr>
<td>23</td>
<td>The usage possibilities of alternative energy resources (solar energy, biogas, wind energy...).</td>
<td>Bérczi Bálint Dániel</td>
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<tr>
<td>24</td>
<td>The risk of alternative energy applications.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>25</td>
<td>Environmental Risk Assessment I</td>
<td>Dr. Varga Csaba</td>
</tr>
<tr>
<td>26</td>
<td>Environmental Risk Assessment II</td>
<td>Dr. Varga Csaba</td>
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<tr>
<td>27</td>
<td>Environmental disasters I</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>28</td>
<td>Environmental disasters II</td>
<td>Bérczi Bálint Dániel</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Neptun**

**Participants**
OSF-MEH  

**CONTROVERSIAL EFFECTS OF MEDIA ON EPIDEMIOLOGY OF COMMUNICABLE AND NON-COMMUNICABLE DISEASES**

**Course director:** DR. KATALIN SZENDI, assistant professor  
Department of Public Health Medicine

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

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

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

**Prerequisites:** none

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**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 prevention  
   Dr. Berényi Károly
4. Health behaviour in secondary and tertiary prevention  
   Dr. Berényi Károly
5. Effect of primordial prevention on health behaviour  
   Dr. Berényi Károly
6. Short and long term effects of health education and health promotion on health behaviour  
   Dr. Berényi Károly
7. Mass communication in the ancient world and in the middle ages  
   Dr. Berényi Károly
8. Role of the church and religions in idea of health  
   Dr. Berényi Károly
9. Role of media in social integration  
   Dr. Berényi Károly
10. Media and causes of violent death  
    Dr. Berényi Károly
11. Hygiene in media  
    Dr. Berényi Károly
12. Role of media in the spread and prevention of infectious diseases  
    Dr. Berényi Károly
13 Change of body image and ideal body shape from historical era to nowadays  
   Dr. Berényi Károly
14 Role of media in anorexia, inverse anorexia and other body dysmorphic disorders  
   Dr. Berényi Károly
15 Role of media in sexual behaviour  
   Dr. Berényi Károly
16 Effects of media on ideal family models  
   Dr. Berényi Károly
17 Physical activity and media - ways of motivation  
   Dr. Berényi Károly
18 Physical activity and media - demotivation effects  
   Dr. Berényi Károly
19 Effects of media on diet quality  
   Dr. Berényi Károly
20 Age-specific projections of idea of health by mass communication  
   Dr. Berényi Károly
21 Communication of environmental hazards  
   Dr. Berényi Károly
22 Mental health in mass communication  
   Dr. Berényi Károly
23 Addictions in media  
   Dr. Berényi Károly
24 Subliminal messages  
   Dr. Berényi Károly
25 Media as an addiction  
   Dr. Berényi Károly
26 Health messages in social media  
   Dr. Berényi Károly
27 Medical doctors in media  
   Dr. Berényi Károly
28 Role of media in medical doctors’ judgement  
   Dr. Berényi Károly

Practices
Seminars
Exam topics/questions
Neptun
Participants
**OSF-MPR**  
**Marketing in Different Levels of Prevention**

**Course director:**  
**DR. TIMEA VARJAS,** assistant professor  
Department of Public Health Medicine

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

**Number of hours/semester:**  
14 lectures + 0 practices + 0 seminars = total of 14 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. "Marketing mix", "4P" - "7P". Health as service  
   Dr. Berényi Károly
4. The role of the media - opinion-forming power of news. The role of the media - information abundance  
   Dr. Berényi Károly
5. Promotion in health.  
   Dr. Berényi Károly
6. Seconder prevention and the media. Primary prevention in the media  
   Dr. Berényi Károly
7. Communicable diseases. Non-communicable diseases  
   Dr. Varjas Timea
8. Epidemiological evidence in primary prevention in non-communicable diseases  
   Dr. Varjas Timea
9. Lifestyle-marketing  
   Dr. Berényi Károly
10. Nutrition-marketing  
    Dr. Berényi Károly
11. Drug-marketing  
    Dr. Berényi Károly
12. Dietary supplement-marketing  
    Dr. Berényi Károly
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<thead>
<tr>
<th>No.</th>
<th>Course Title</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>13</td>
<td>How to use the marketing in health promotion. Primary prevention?</td>
<td>Dr. Berényi Károly</td>
</tr>
<tr>
<td>14</td>
<td>Pros and cons Health promotion approach to marketing opportunities</td>
<td>Dr. Berényi Károly</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Neptun**

**Participants**
OSF-MUE MIGRATION HEALTH AND TRAVEL MEDICINE

Course director: DR. ISTVÁN SZILÁRD, honorary professor
Department of Operational Medicine

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

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

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

Participation in 80% of the lessons
Mid-term exams
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

0 Mass migration. Factors inducing/ generating mass migration. Temporary placement of refugees and securing their health care. How can the proper health assistance facilitating the successful integration of regular and labour migrants: tasks and programs. Development and implementation of ‘migrant friendly’ health services. (Prof. Tit. Istvan Szilard MD, PhD)
  Dr. Szilárd István
0 Specific health hazards of different geographic regions. Asia, Africa, South- and Central America, Oceania, Australia, Polar regions
  Dr. Feiszt Zsófia
0 Environmental factors. Extreme warm and cold climatic effects, health problems caused by altitude (mountaineering) and high pressure (diving), caisson disease. Health insurance of tourists; ensuring return of tourists with health problems. (Dr. Peter Felkai PhD)
  Dr. Feiszt Zsófia
0 General overview. Current migration and travel trends world wide. Historical overview. Push and pull factors influencing migration trends. Large populations on move; conditions and consequences. (Prof. Tit. Istvan Szilard MD, PhD)
  Dr. Szilárd István
Health protection and disease prevention of travellers/tourists. Clothing, behaviour, general and specific prevention (vaccination, medicines etc.)
Dr. Feiszt Zsófia

Human rights and forensic medical aspects of migration and travel.
Dr. Szilárd István

Irregular migration and its main characteristics. Trafficking and smuggling in human beings, refugees. Health impact of the implementation of the ‘Schengen’ border management procedure. (Prof. Tit. Istvan Szilard MD, PhD)
Marek Erika

Travellers with special health conditions. Pregnant women, children, persons with known chronic diseases etc.
Dr. Feiszt Zsófia

Food- and water born diseases. Gastrointestinal infections, different types of hepatitis etc.
Dr. Feiszt Zsófia

Rare infectious diseases. Tropical parasites, Schistosomiasis, Trypanosomiasis, Leprosy, Plague, Rabies, tropical insects’- animals’ bite.
Dr. Feiszt Zsófia

Irregular migration and related health and public health tasks. Health screenings, most frequent somatic and mental health disorders; ensuring proper placement of irregular migrants; health impact of and coping with cultural differences. Victims of trafficking and their special health care need. (Prof. Tit. Istvan Szilard MD, PhD)
Dr. Szilárd István

Leading symptoms of diseases acquired during travel/ tourism. Fever, diarrhoea, jaundice/ icterus, rash etc.
Dr. Feiszt Zsófia

Vector born diseases. Malaria, Yellow fever, Dengue fever, other haemorrhagic fevers, principle symptoms, possibilities for prevention
Dr. Feiszt Zsófia

Health problems related to travel/ tourism. The health-related issues of an increasing number of tourists travelling the world for business and leisure require attention to questions of prevention and protection, avoidance of health hazards, as well as measures to follow in case of illness. Jet leg. (Dr. Peter Felkai PhD)
Dr. Feiszt Zsófia

Practices

Seminars

Exam topics/questions

1/ Current migration trends and their public health impact in Europe
2/ Travel and tourism related environmental factors
3/ Health hazards related with travel and tourism. Special health insurance conditions
4/ Special health conditions and their excess health hazards during travels
5/ Special health hazards of different geographic regions
6/ Preparations for travel related health hazards and possibilities in risk reduction
7/ Food and water born infections
8/ Vector born diseases
9/ Rare diseases travellers/ tourist may be infected with
10/ Alarming symptoms of rare diseases returnees may contact the health service
11/ Trends and composition of irregular migration directed towards the European Union
12/ Health and public health impact of irregular migration
13/ Migrant friendly health services; their aim and characteristics
14/ Human rights aspects of health care provision for migrants

Participants
OSF-MUV

**PSYCHIATRY AND ART**

Course director: Dr. Tamás Tényi, professor

Department of Psychiatry and Psychotherapy

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

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

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. Psychology of creativity III
   Dr. Tényi Tamás
7. Psychology of creativity IV
   Dr. Tényi Tamás
8. Poetry of psychotics
   Dr. Tényi Tamás
9. Van Gogh
   Dr. Tényi Tamás
10. Art therapy I
    Dr. Tényi Tamás
11. Art therapy II
    Dr. Tényi Tamás
12. Music therapy I
    Dr. Tényi Tamás
13. Music therapy II
    Dr. Tényi Tamás
14. Summary
    Dr. Tényi Tamás
Practices

Seminars

Exam topics/questions

None

Participants

Dr. Tényi Tamás (TETGAAO.PTE)
**OSF-N64**

**INTERCULTURAL COMPETENCE IN DOCTOR-PATIENT COMMUNICATION**

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

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

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

**Course headcount limitations (min.-max.):**
3 – 20

**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**

Two written tests.

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

Participants

Dr. Németh Timea (NETAAA.B.JPTE), Marquette Jon Eugene (MAJWAA0.PTE)
OSF-NET  
INTERNET (COMPUTER APPLICATIONS 2)

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

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

Number of hours/semester: 0 lectures + 14 practices + 0 seminars = total of 14 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
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.
2  Internet history. Internet access options.
3  Connections 1 (email)
4  Connections 1 (email)
5  Connections 2 (news-groups, forums, chat, phone, ...)
6  Connections 2 (news-groups, forums, chat, phone, ...)
7  Up- and downloading files
8  Up- and downloading files
9  Find and look for information: the web 1
10 Find and look for information: the web 1
11 Searching information - the web 2. Other Internet services: e-government, e-business, e-learning, etc.
12 Searching information - the web 2. Other Internet services: e-government, e-business, e-learning, etc.
13 web2 ... communities, web-based services
14 web2 ... communities, web-based services

Seminars
Exam topics/questions
Tasks to submit, tests to complete

Participants
Dr. Pótó László (POLGABO.PTE)
OSF-NS1  NOBEL PRIZE AWARDED CELL BIOLOGY I
Course director:  DR. MARIANNA PAP, associate professor
Department of Medical Biology

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1
Number of hours/semester:  28 lectures + 0 practices + 0 seminars = total of 28 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
Written test on the last week.
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  History of Nobel prize, interesting facts
   Dr. Pap Marianna
2  Structure of nucleic acids, catalytic RNA molecules
   Dr. Pap Marianna
3  Structure of proteins
   Dr. Pap Marianna
4  Prions
   Dr. Pap Marianna
5  PCR
   Dr. Pap Marianna
6  Targeted mutagenesis
   Dr. Pap Marianna
7  Recombinant DNA technology
   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
12 Regulation of cell cycle  
   Dr. Pap Marianna
13 DNA synthesis  
   Dr. Pap Marianna
14 DNA repair  
   Dr. Pap Marianna
15 Eukariotyc RNA synthesis  
   Dr. Pap Marianna
16 Eukariotyc RNA synthesis  
   Dr. Pap Marianna
17 Splicing  
   Dr. Pap Marianna
18 Splicing  
   Dr. Pap Marianna
19 Structure and function of ribosomes  
   Dr. Pap Marianna
20 Role of RNA molecules in translation  
   Dr. Pap Marianna
21 Genetic code  
   Dr. Pap Marianna
22 Genetic code  
   Dr. Pap Marianna
23 Gene regulation  
   Dr. Pap Marianna
24 Gene regulation  
   Dr. Pap Marianna
25 Rough endoplasmic reticulum  
   Dr. Pap Marianna
26 Vesicular transport  
   Dr. Pap Marianna
27 Receptor-mediated endocytosis  
   Dr. Pap Marianna
28 Receptor-mediated endocytosis, Exam  
   Dr. Pap Marianna

Practices
Seminars
Exam topics/questions
Participants
OSF-POG  THE MEDICAL ASPECTS OF HUMAN POPULATION GENETICS

Course director: DR. TIMEA VARJAS, assistant professor
Department of Public Health Medicine

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

Number of hours/semester: 12 lectures + 2 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 1 – 30  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
Absences should not exceed 15% (2x45 min). Otherwise the semester cannot be accepted

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
  Human Population Genetics
  John H. Relethford
  Department of Anthropology
  State University of New York College at Oneonta
  A John Wiley & Sons, Inc., Publication
  2012.
  Population Genetics
  Matthew B. Hamilton
  A John Wiley & Sons, Ltd., Publication
  2009

Lectures
1  Basic concepts of population genetics (polymorphism, migration, genetic drift)
   Bérczi Bálint Dániel
2  The Hardy-Weinberg principle
   Bérczi Bálint Dániel
3  Human Genome Project, The HapMap Project
   Bérczi Bálint Dániel
4  Ethical issues in disease genotyping (scandals and penalties)
   Bérczi Bálint Dániel
5  The microRNA polymorphism related disease susceptibility
   Bérczi Bálint Dániel
6  Application of population genetics in Forensic Medicine
   Bérczi Bálint Dániel
7  Human origin related researches - The application of chromosome Y
   Bérczi Bálint Dániel
8  Next generation sequencing technologies in Forensic Medicine
   Bérczi Bálint Dániel
9  Various disease spectrums in various ethnic groups I.
    Bérczi Bálint Dániel
10  Various disease spectrums in various ethnic groups II.
    Bérczi Bálint Dániel
11  The genetic distance between various ethnic groups
    Dr. Varjas Timea
12  The mitochondrial Eve
    Dr. Varjas Timea

Practices
1  Methodological background of population genetics related researches I.
2  Methodological background of population genetics related researches II.

Seminars
Exam topics/questions
Neptun

Participants
Bérczi Bálint Dániel (BEBIABT.PTE)
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
2. Behavioral evolution I. Key facts
3. Behavioral evolution II. Game theory
4. Behavioral evolution III. Misconceptions
5. Behavioral evolution IV. Intersexual conflicts and diseases
6. Molecular genetics I. Chimps to humans 97%, sibling to sibling 50%?
7. Molecular genetics II. Morphology vs function
8. Molecular genetics III. Diseases
9. Molecular genetics IV. Beyond disease
10. Behavioral genetics I. I’ve found the gene for that!
11. Behavioral genetics II. Prenatal effects
12. Behavioral genetics III. Metro dogs
13. Behavioral genetics IV. Gene-environment interaction
14. Summary, questions, discussion, exam

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

Making up for missed classes

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

Reading material

- Obligatory literature
- 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](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. General introduction
   Dr. Mátics Róbert
3. Behavioral evolution I. Key facts
   Dr. Mátics Róbert
4. Behavioral evolution I. Key facts, discussion
   Dr. Mátics Róbert
3. Behavioral evolution II. Game theory
Dr. Mátics Róbert

4. Behavioral evolution III. Misconceptions
Dr. Mátics Róbert

5. Behavioral evolution IV intersexual conflicts and diseases
Dr. Mátics Róbert

6. Molecular genetics I. Chimps to humans 97%, sibling to sibling 50%?
Dr. Mátics Róbert

7. Molecular genetics II. Morphology vs function
Dr. Mátics Róbert

8. Molecular genetics III. Diseases
Dr. Mátics Róbert

9. Molecular genetics IV. Beyond disease
Dr. Mátics Róbert

10. Behavioral genetics I. I've found the gene for that!
Dr. Mátics Róbert

11. Behavioral genetics II. Prenatal effects
Dr. Mátics Róbert

12. Behavioral genetics III. Metro dogs
Dr. Mátics Róbert

13. Behavioral genetics IV. Gene-environment interaction
Dr. Mátics Róbert

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.

Participants
# UNIVERSITY LEARNING SKILLS

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

<table>
<thead>
<tr>
<th>1 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 1</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong></td>
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<td>14 lectures + 0 practices + 0 seminars = total of 14 hours</td>
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<td><strong>Course headcount limitations (min.-max.):</strong></td>
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<td>1 – 200</td>
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<tr>
<td><strong>Prerequisites:</strong></td>
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</table>

## Topic

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. All home-works completed.

## Mid-term exams

Making up for missed classes

## 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. Introduction. Changes in learning conditions and requirements. Personality differences.  
   Dr. Pótó László
3. Lectures and practices. Taking notes.  
   Dr. Pótó László
4. Lectures and practices. Taking notes.  
   Dr. Pótó László
5. Further use of notes.  
   Dr. Pótó László
6. Further use of notes.  
   Dr. Pótó László
7. Reading techniques. Learning from textbooks.  
   Dr. Pótó László
8. Reading techniques. Learning from textbooks.  
   Dr. Pótó László
9. Time management basics for students.  
   Dr. Pótó László
10. Time management basics for students.  
    Dr. Pótó László
11. Personal and group techniques.  
    Dr. Pótó László
12. Personal and group techniques.  
    Dr. Pótó László
13. Tests and exams.  
    Dr. Pótó László
    Dr. Pótó László
Practices
Seminars
Exam topics/questions
Submit all homework (weekly).

Participants
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, Muclangu, Peruvian Torch cactus, Salvia divinorum)
3. Africa (Sceletium Tortuosum (kanna), Silene Capensis (xhosa dream root), Leonotis Leonurus (wild dagga), Alepidea Amathimbica (imphepo), ubulawu (african ayahuasca tea)
4. Eurásia (Lactuca virosa (wild lettuce), Nymphea Caerulea (Blue Lilly), Amanita Muscaria (fly agaric), Psylocibe 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
13. New researches
14. Summary of this course

Exam topics/questions

- Participants

Feldmann Ádám (FEAFAD.B.JPTE)
OSF-UMO

THE ROAD TO MOLECULAR MEDICINE

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

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

Number of hours/semester: 13 lectures + 0 practices + 0 seminars = total of 13 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
  - Literature developed by the Department
    The course consists of lectures of the board-and-chalk style. Taking notes is recommended.

- Notes

- 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 Microsatellite diseases
   Dr. Szeberényi József
11 Transcription factor diseases
   Dr. Szeberényi József
12 Dystrophinopathies
   Dr. Szeberényi József
13 Test exam
   Dr. Szeberényi József
Practices
Seminar
Exam topics/questions
Participants
OSF-VB1  How to Take the Exam in Molecular Cell Biology? 1

Course director: Dr. Gergely BERTA, assistant professor
Department of Medical Biology

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

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

Course headcount limitations (min.-max.): 5 – 100
Prerequisites: none

Topic
The objective of this course is to imitate the oral exam situation of Molecular Cell Biology (MCB) in a small-group-discussion setting. The list of exam question of MCB will be followed during the course: each time 4-5 students of the 20-25 member class will be examined with one question for each examinee. The examiner is one of the instructors/professors of the Department who conducts and grades the examination the same way as on „real” exams. All the examiners of the Department will be involved, in a rotation system. The aim of the course is to make students familiar with the stressful atmosphere of oral exams. Only students ready to be exposed to the exam situation week-after-week are invited to take this course.

Conditions for acceptance of the semester
The grade is determined by continuous performance evaluation. Maximum absences: 4.

Mid-term exams
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 Orientation
2 Exam trial
3 Exam trial
4 Exam trial
5 Exam trial
6 Exam trial
7 Exam trial
8 Exam trial
9 Exam trial
10 Exam trial
11 Exam trial
12 Exam trial
13 Exam trial
14 Exam trial

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

Participants
Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Bátor Judit (BAJFMAAO.PTE), Dr. Berta Gergely (BEGFAADO.PTE), Dr. Kemény Ágnes (KEAAAA.T.JPTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Szeberényi József (SZJGACO.PTE), Dr. Tarjányi Oktávia (TAOGAAO.PTE), Harci Alexandra (HAAGABT.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE), Németh Mária (NEMGAAT.PTE), Schipp Renáta (SCRDAAT.T.JPTE), Varga Judit (VAJGACT.PTE)
OSF-VM1  HOW TO TAKE THE EXAM IN MOLECULAR CELL BIOLOGY AS A DENTISTRY STUDENT? 1

Course director:  DR. GERGELY BERTA, assistant professor
Department of Medical Biology

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

Number of hours/semester:  0 lectures + 0 practices + 14 seminars = total of 14 hours
Course headcount limitations (min.-max.):  5 – 25  Prerequisites:  OSA-MF1 parallel

Topic
The objective of this course is to imitate the oral exam situation of „Molecular Cell Biology for students of dentistry” in a small-group-discussion setting. The list of exam question of MCB will be followed during the course: each time 4-5 students of the 20-25 member class will be examined with one question for each examinee. The examiner is one of the instructors/professors of the Department who conducts and grades the examination the same way as on „real” exams. All the examiners of the Department will be involved, in a rotation system. The aim of the course is to make students familiar with the stressful atmosphere of oral exams. Only students ready to be exposed to the exam situation week-after-week are invited to take this course.

Conditions for acceptance of the semester
The grade is determined by continuous performance evaluation. Maximum absences: 4.

Mid-term exams
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  Orientation
2  Exam trial
3  Exam trial
4  Exam trial
5  Exam trial
6  Exam trial
7  Exam trial
8  Exam trial
9  Exam trial
10 Exam trial
11 Exam trial
12 Exam trial
13 Exam trial
14 Exam trial

Exam topics/questions
See at: Molecular Cell Biology for students of dentistry 1.

Participants
Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Bátor Judit (BAJFAAO.PTE), Dr. Berta Gergely (BEGFADO.PTE), Dr. Kemény Ágnes (KEAAAA.T.JPTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Szeberényi József (SZJGACO.PTE), Dr. Tarjányi
Oktávia (TAOGAAO.PTE), Harci Alexandra (HAAGABT.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE), Németh Mária (NEMGAAT.PTE), Schipp Renáta (SCRDAAT.JPTE), Varga Judit (VAJGACT.PTE)
**OSE-ABI**  
**APPLIED BIOMETRICS**

**Course director:**  
DR. KORNÉLIA FARKAS-BORBÁS, assistant professor  
Institute of Bioanalysis

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

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

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

**Prerequisites:** OSA-FI1 completed

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

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**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  
   Borbásné Dr. Farkas Kornélia
2. Refresh the bio-statistical knowledge  
   Borbásné Dr. Farkas Kornélia
3. Variance analysis  
   Borbásné Dr. Farkas Kornélia
4. Regression analysis  
   Borbásné Dr. Farkas Kornélia
5. Correlation analysis  
   Borbásné Dr. Farkas Kornélia
6. Survival analysis  
   Borbásné Dr. Farkas Kornélia
7. Factor analysis  
   Borbásné Dr. Farkas Kornélia

**Practices**

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

Exam topics/questions

Participants

Borbásné Dr. Farkas Kornélia (FAKAAA.T.JPTE)
OSE-B02  

**Biophysics Seminars 2**

**Course director:**  
DR. ANDRÁS SZILÁRD LUKÁCS, associate professor

Department of Biophysics

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

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

**Course headcount limitations (min.-max.):**  
5 – 40  

**Prerequisites:**  
OSA-BI2 parallel  

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

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**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. Radioactivity. Radioactive radiations
2. Spectrophotometry
3. Infrared and Raman spectroscopy
4. Fluorescence spectroscopy
5. Fluorescence anisotropy. FRET
6. Light microscopy, fluorescence microscopy
7. Modern microscopic methods. FRAP
9. NMR
10. MRI
11. X-ray diagnostics. CT
12. Gamma-camera, SPECT, PET
13. Ultrasound
14. Test writing

**Exam topics/questions**

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

**Participants**

Dr. Kengyel András Miklós (KEAFACO.PTE), Dr. Lukács András Szilárd (LUATAA0.PTE), Futó Kinga (FUKIAAT.PTE), Huber Tamás (HUTEAB.T.JPTE), Kilián Balázané Raics Katalin (RAKHAAT.PTE), Kollár Veronika Tünde (KOVGACT.PTE)
OESE-BVK  CHEMISTRY OF BIOACTIVE ORGANIC COMPOUNDS

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

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 5 – 50
Prerequisites: OSA-OM1 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, some alkaloids and the more important antibiotics. In the case of antibiotics as a major goal, the program affords a short overview of the structure of these compounds, biological effect, relationships and the biochemical mechanism of action.

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

Conditions for acceptance of the semester
Successful written examination.

Mid-term exams
-

Making up for missed classes
None.

Reading material
- Obligatory literature
- Literature developed by the Department
  http://aok.pte.hu/index.php?page=egyseg&egy_id=20&nyelv=eng&menu=okt_anyag  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  Water soluble vitamins I
   Dr. Agócs Attila
2  Water soluble vitamins II.
   Dr. Agócs Attila
3  Fat soluble vitamins I
   Dr. Agócs Attila
4  Fat soluble vitamins II
   Dr. Agócs Attila
5  Pigments of porphyrin skeleton I
   Dr. Agócs Attila
6  Pigments of porphyrin skeleton II
   Dr. Agócs Attila
7  Pigments of flavonoid and anthocynidin skeleton I
   Dr. Agócs Attila
8  Pigments of flavonoid and anthocynidin skeleton II
   Dr. Agócs Attila
9  Carotenoids I
   Dr. Agócs Attila
10  Carotenoids II
    Dr. Agócs Attila
11  Introduction to the antibiotics I
    Dr. Lóránd Tamás
12  Introduction to the antibiotics II
    Dr. Lóránd Tamás
13 Beta-lactam antibiotics, penicillins  
Dr. Lóránd Tamás  
14 Beta-lactam antibiotics, cephalosporins I  
Dr. Lóránd Tamás  
15 Beta-lactam antibiotics, cephalosporins II  
Dr. Lóránd Tamás  
16 Beta-lactam antibiotics, other beta-lactams I  
Dr. Lóránd Tamás  
17 Beta-lactam antibiotics, other beta-lactams II  
Dr. Lóránd Tamás  
18 Aminoglycosides I  
Dr. Lóránd Tamás  
19 Aminoglycosides II  
Dr. Lóránd Tamás  
20 Macrolides I  
Dr. Lóránd Tamás  
21 Macrolides II  
Dr. Lóránd Tamás  
22 Tetracyclines I  
Dr. Lóránd Tamás  
23 Tetracyclines II  
Dr. Lóránd Tamás  
24 Glycopeptides I  
Dr. Lóránd Tamás  
25 Other antibiotics  
Dr. Lóránd Tamás  
26 Antifungal antibiotics  
Dr. Lóránd Tamás  
27 Alkaloids of medical importance  
Dr. Lóránd Tamás  
28 Test Paper.  
Dr. Lóránd Tamás  

Practices  
Seminars  

Exam topics/questions  


Participants
OSF-EM1  
**Embryology for Students of Dentistry 1**

*Course director:*

**DR. JUDIT HORVÁTH**, associate professor  
Department of Anatomy

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

**Number of hours/semester:**  
10 lectures + 0 practices + 2 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 1 – 260  
**Prerequisites:** OSA-B2A completed + OSA-ZT1 parallel

---

**Topic**

Basic embryology (embryogenesis). Early development of the human body, embryogenesis, external appearance of the fetus. This is the first part of a two-semester subject.  
Embryology helps to explain the normal anatomical situs and certain malformations, syndromes. (The lectures will be in the morning, alternating with the series of your histology lectures!)

**Conditions for acceptance of the semester**

Presence on at least 85% of course hours is required. Absence (for any reason) is max. 2 teaching hours (= 2x45 min).

**Mid-term exams**

Test on the last week of the semester. In case of unsuccessful result there is a possibility to correct it orally in the first week of the exam period.

**Making up for missed classes**

For the seminar students may attend the class of another group (strictly on the same week).

**Reading material**

- **Obligatory literature**  
  [http://an-server.pote.hu/INFO/eIrod.htm](http://an-server.pote.hu/INFO/eIrod.htm)

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

- **Notes**

- **Recommended literature**

**Lectures**

1. Progenesis I  
   Dr. Horváth Judit

2. Progenesis II  
   Dr. Horváth Judit

   Dr. Horváth Judit

4. Blastocyst formation, implantation.  
   Dr. Horváth Judit

5. Gastrulation and neurulation. Determination of the body axes  
   Dr. Horváth Judit

6. Differentiation of the mesoderm, development of the muscular system.  
   Dr. Horváth Judit

7. Flexion of the embryo. The umbilical cord  
   Dr. Horváth Judit

8. Fetal membranes, decidua, placenta  
   Dr. Horváth Judit

   Dr. Horváth Judit

10. Malformations and twinnings.  
    Dr. Horváth Judit

**Practices**

**Seminars**

1. Embryology seminar

2. Embryology seminar
Exam topics/questions

http://an-server.pote.hu

Participants

Dr. Gaszner Balázs (GABFADO.PTE), Dr. Horváth Judit (HOJIAAO.PTE), Dr. Reglödi Dóra (REDMAAO.PTE), Opper Balázs (OPBFAB.TJPFTE)
**OSE-H2A  MEDICAL HUNGARIAN 2A - COMMUNICATION SKILLS**

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

- **2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2**
- **Number of hours/semester:** 0 lectures + 28 practices + 0 seminars = total of 28 hours
- **Course headcount limitations (min.-max.):** 2 – 25
- **Prerequisites:** OSE-H1A completed + OSE-H2B parallel

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

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

### Conditions for acceptance of the semester
Participation in class work is obligatory. In case absences 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
In the case of absences up to 25% of total class time, oral examination will have to be taken.

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

### Lectures

### Practices

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<th>Lecture</th>
<th>Topic</th>
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<td>Logical relations, comparison</td>
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<td>2</td>
<td>Logical relations, comparison</td>
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<td>3</td>
<td>Giving orientation, informing people</td>
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<td>4</td>
<td>Giving orientation, informing people</td>
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<td>5</td>
<td>Giving descriptions, requesting and providing information</td>
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<td>6</td>
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<td>Polite request, command and warning</td>
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<td>Parts of the human body, pain, basic symptoms</td>
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<td>Parts of the human body, pain, basic symptoms</td>
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<td>History taking: presenting complaints, location, direction and character of pain</td>
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</tbody>
</table>
Seminars

Exam topics/questions

Participants

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Eklicsné Dr. Lepenye Katalin (EKLAXA.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Hild Gabriella (MAGAAD.B.JPTE), Horváth Lilla Anita (HOLFABP.PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAL.B.JPTE), Szántókné Dr. Csongor Alexandra (CSAAAA.B.JPTE), Váradi Katalin (VAKHAEE.PTE)
**OSE-H2B Medical Hungarian 2B - Language Points**

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

<table>
<thead>
<tr>
<th>2 credit</th>
<th>midsemester grade</th>
<th>Elective subject</th>
<th>spring semester</th>
<th>recommended semester: 2</th>
</tr>
</thead>
</table>

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

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

**Prerequisites:** OSE-H1B completed + OSE-H2A 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**

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

**Reading material**

- Obligatory literature
- Literature developed by the Department
  

- Notes
- Recommended literature

**Lectures**

**Practices**

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

Exam topics/questions

- 

Participants

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Eklicsné Dr. Lepenye Katalin (EKLAXA.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Hild Gabriella (MAGAAD.B.JPTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Szántóné Dr. Csongor Alexandra (CSAAAA.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
OSE-MOM  MOLECULAR MEDICINE

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

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

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

Making up for missed classes

None.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- 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  Mosaicism
   Dr. Kosztolányi György
6  Mosaicism
   Dr. Kosztolányi György
7  Human genome project
   Dr. Szeberényi József
8  Human genome project
   Dr. Szeberényi József
9  The RNA world
   Dr. Szeberényi József
10 The RNA world
    Dr. Szeberényi József
11 Non-Mendelian monogenic inheritance
   Dr. Kosztolányi György
12 Non-Mendelian monogenic inheritance
   Dr. Kosztolányi György
13 National holiday  
   Dr. Szeberényi József
14 National holiday  
   Dr. Szeberényi József
15 Diseases of protein folding  
   Dr. Szeberényi József
16 Diseases of protein folding  
   Dr. Szeberényi József
17 Genetics and environment: epigenetics  
   Dr. Kosztolányi György
18 Genetics and environment: epigenetics  
   Dr. Kosztolányi György
19 Intracellular antibodies  
   Dr. Szeberényi József
20 Intracellular antibodies  
   Dr. Szeberényi József
21 Molecular cytogenetics  
   Dr. Szeberényi József
22 Molecular cytogenetics  
   Dr. Szeberényi József
23 Cloning of mammals  
   Dr. Szeberényi József
24 Cloning of mammals  
   Dr. Szeberényi József
25 Ethical aspects of molecular genetics  
   Dr. Kosztolányi György
26 Ethical aspects of molecular genetics  
   Dr. Kosztolányi György
27 Closing test  
   Dr. Szeberényi József
28 Closing test  
   Dr. Szeberényi József

Practices
Seminars
Exam topics/questions
None.
Participants
Experiments in Molecular Cell Biology

Course director: Dr. József Szeberényi, professor
Department of Medical Biology

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

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

Making up for missed classes

None.

Reading material

- Obligatory literature

- 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

- Recommended literature

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

Lectures

1. Methods to study the cytoskeleton
   Dr. Szeberényi József
2. Methods to study the cell membrane and the extracellular matrix
   Dr. Szeberényi József
3. Methods to study receptor proteins
   Dr. Szeberényi József
4. Methods to study G protein-mediated signaling processes
   Dr. Szeberényi József
5. Methods to study growth factor and cytokine signaling
   Dr. Szeberényi József
6. Methods to study apoptosis
   Dr. Szeberényi József
7. Test
   Dr. Szeberényi József
8. Methods to study oncogenic viruses
   Dr. Szeberényi József
9. Methods to study cellular oncogenes
   Dr. Szeberényi József
10. Methods to study tumor suppressor genes
    Dr. Szeberényi József
Methods to study abnormalities in the cell cycle
Dr. Szeberényi József

Methods of human genetics
Dr. Szeberényi József

Methods of molecular medicine
Dr. Szeberényi József

Final test
Dr. Szeberényi József

Practices

Seminars

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

Exam topics/questions

Multiple-choice test.

Participants

Dr. Bátor Judit (BAJFAAO.PTE), Dr. Pap Marianna (PAMFAAO.PTE), Kiss Katalin (KIKFABO.PTE), Schipp Renáta (SCRDAA.T.IPTE), Varga Judit (VAJGACT.PTE)
Molecular Cell Biology Seminar for Students of Dentistry 2

Course director: GYÖRGY SÉTÁLÓ JR., associate professor
Department of Medical Biology

Course description:

2 credits • midsemester grade • Elective subject • Spring semester • recommended semester: 2

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

Course headcount limitations (min.-max.): 5 – 25

Prerequisites: OSA-MB1 completed + OSA-MB2 parallel

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

Topic

Goal is the discussion of the material following/covered by the lectures of the compulsory subject MOLECULAR CELL BIOLOGY 2 in small groups in an interactive way.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

Two mid-term tests of the multiple-choice question type, one on the seventh, the other on the last week of the semester (30-30 questions).

Making up for missed classes

It is not possible to make up for missed classes.

Reading material

- Obligatory literature
  - Literature developed by the Department
    Szeberényi, J., Komáromy, L.: Molecular Cell Biology Syllabus
- Notes
- Recommended literature
  - Gerald Karp: Cell and Molecular Biology
  - Lodish et al.: Molecular Cell Biology
  - Alberts et al.: Molecular Biology of the Cell
  - Szeberényi J.: Experiments in Molecular Cell Biology

Lectures

Practices

Seminars

1. Passive transport
2. Active transport
3. The extracellular matrix
4. Introduction to signaling
5. Types of intracellular signaling
6. Signaling via heterotrimeric G-proteins
7. Katalytic receptors
8. Stress signaling
9. Cytokine and integrin signaling
10. General features of signaling processes
11. Molecular mechanisms of embryonic development
12. Types of cell death: necrosis and apoptosis
13. The mechanism of apoptosis
14. The tumor cell
15. DNA tumor viruses
16. RNA tumor viruses
17. Retroviral oncogenes
18. Cellular oncogenes I.
19. Cellular oncogenes II.
Cellular oncogenes III.
Tumor suppressor genes I.
Tumor suppressor genes II.
Oncogenes and the cell cycle
Experimental carcinogenesis
Tumor invasion and metastasis
Molecular diagnostics
Gene therapy
Pre-exam consultation

Exam topics/questions
See the test banks of the department!

Participants
Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Bátor Judit (BAJFAAO.PTE), Dr. Berta Gergely (BEGFADO.PTE), Dr. Fekete Zsuzsanna (FEZAAB.T.JPTE), Dr. Kemény Ágnes (KEAAAA.T.JPTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Tarjányi Oktávia (TAOGAAO.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE), Németh Mária (NEMGAAT.PTE), Varga Judit (VAJGACT.PTE)
# OSE-TAR  NUTRITION AND CANCER

**Course director:**  
Dr. István Kiss, professor  
Department of Public Health Medicine

| 2 credit • midterm grade • Elective subject • spring semester • recommended semester: 2 |
|---|---|
| Number of hours/semester: | 26 lectures + 2 practices + 0 seminars = total of 28 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 carcinopreventive 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**

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
2. Possibilities for cancer prevention.  
   Dr. Kiss István
3. The role of energy intake in carcinogenesis.  
   Dr. Kiss István
4. The role of protein, carbohydrate intake in carcinogenesis.  
   Dr. Kiss István
5. The role of fat intake in carcinogenesis I.  
   Dr. Kiss István
6. The role of fat intake in carcinogenesis II.  
   Dr. Kiss István
7. The role of alcohol in carcinogenesis I.  
   Bérczi Bálint Dániel
8. The role of alcohol in carcinogenesis II.  
   Bérczi Bálint Dániel
9. Compounds of plant origin and their role in carcinogenesis I.  
   Dr. Kiss István
10. Compounds of plant origin and their role in carcinogenesis II.  
    Dr. Kiss István
11. Compounds of plant origin and their role in carcinogenesis III.  
    Dr. Rákosy Zsuzsa
12. Compounds of plant origin and their role in carcinogenesis IV.  
    Dr. Rákosy Zsuzsa
13 The role of micro-nutrients in cancer formation.
   Dr. Gyöngyi Zoltán
14 Drinking water and cancers.
   Dr. Gyöngyi Zoltán
15 Genetically modified foods I.
   Dr. Gyöngyi Zoltán
16 Genetically modified foods II.
   Dr. Gyöngyi Zoltán
17 Nutrigenomics.
   Dr. Gombos Katalin
18 Epigenetics and cancer.
   Dr. Gombos Katalin
19 Anticarcinogenic compounds in foods I.
   Dr. Rákosy Zsuzsa
20 Anticarcinogenic compounds in foods II.
   Dr. Rákosy Zsuzsa
21 Food pollutants and food additives I.
   Vági Zsolt József
22 Food pollutants and food additives II.
   Vági Zsolt József
23 The role of kitchen technology in the formation of cancers I.
   Vági Zsolt József
24 The role of kitchen technology in the formation of cancers II.
   Vági Zsolt József
25 The relationship between nutrition and cancers I.
   Dr. Gyöngyi Zoltán
26 The relationship between nutrition and cancers II.
   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

Participants
Dr. Kiss István (KIIFAD.A.JPTE)
**OSF-ATS**

<table>
<thead>
<tr>
<th>Health Effects of Alternative Dietary Habits</th>
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<tbody>
<tr>
<td><strong>Course director:</strong> DR. TIMEA VARJAS, assistant professor</td>
</tr>
<tr>
<td><strong>Department of Public Health Medicine</strong></td>
</tr>
</tbody>
</table>

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

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

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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.

**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
    - PPT-presentations (Neptun)

- **Notes**

- **Recommended literature**

**Lectures**

1. The vegetarian diet I. Lacto, ovo, lacto-ovo vegetarian nutrition
   Szijártó György Ágoston
2. The vegetarian diet II. Strict vegan, pesco, pollo vegetarian nutrition
   Szijártó György Ágoston
3. Vegan diet I. Fruitarianism, raw food diet
   Szijártó György Ágoston
4. Vegan diet II. Macrobiotic diet
   Szijártó György Ágoston
5. The reform diet
   Szijártó György Ágoston
6. Separation diets I. Diamond's fit-for-life diet
   Szijártó György Ágoston
7. Separation diets II. Hay's alkalizing, acidifying diet
   Szijártó György Ágoston
8. Fashion diets I. Bruker's diet
   Szijártó György Ágoston
9. Fashion diets II. Steine's diet
   Szijártó György Ágoston
10. Atkins diet
    Szijártó György Ágoston
11. The Paleolithic diet
    Szijártó György Ágoston
12. Norbi-Update diet
    Szijártó György Ágoston
13. Mediterranean diet
    Szijártó György Ágoston
14 Importance of organic foods in the diet
   Dr. Varjas Timea

Practices
Seminars
Exam topics/questions
Neptun
Participants
### OSF-BAA  
**Evidence-based Complementary and Alternative Medicine**

| Course director: | DR. KRISZTIAN KVELL, associate professor  
Department of Pharmaceutical Biotechnology |
|------------------|------------------------------------------------------------------------------------------|

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

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

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**Topic**

Presenting the Evidence-based Complementary and Alternative Medicine; types, applications and tasks.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

According the legislations.

**Making up for missed classes**

According the legislations.

**Reading material**

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

  Joseph E. Pizzorno-Michael T. Murray: Textbook of Natural Medicine
  
  [http://www.hindawi.com/journals/ecam/](http://www.hindawi.com/journals/ecam/)

**Lectures**

1. The history of alternative medicine  
   Kovácsné Kósá Judit
2. Basic definitions  
   Kovácsné Kósá Judit
3. Complementary assessment methods  
   Kovácsné Kósá Judit
4. Classical alternative therapies  
   Kovácsné Kósá Judit
5. Alternative therapies in the new age  
   Kovácsné Kósá Judit
6. Traditional medicine  
   Kovácsné Kósá Judit
7. Related professions in the alternative medicine  
   Kovácsné Kósá Judit
8. Clinical studies in the alternative medicine  
   Kovácsné Kósá Judit
9. Physiotherapy, water therapy and element therapies  
   Kovácsné Kósá Judit
10. Phytotherapy  
    Kovácsné Kósá Judit
11. Apitherapy, aromatherapy  
    Kovácsné Kósá Judit
12. Lifestyle therapy, detoxification methods  
    Kovácsné Kósá Judit
13. Neuraltherapy, manualtherapy  
    Kovácsné Kósá Judit
14. Homeopathy, kinesiology  
    Kovácsné Kósá Judit
Practices
Seminars
Exam topics/questions
Neptun MeetStreet
Participants
OSF-BET  
HEALTH SCIENCE OF WINE

Course director:  
DR. ISTVÁN KISS, professor
Department of Public Health Medicine

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

Number of hours/semester:  
12 lectures + 2 practices + 0 seminars = total of 14 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 meant 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). 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  Epidemiological data on the association between health status and wine consumption I  
Bérczi Bálint Dániel
2  Epidemiological data on the association between health status and wine consumption II  
Bérczi Bálint Dániel
3  Health risks associated with alcohol consumption I  
Bérczi Bálint Dániel
4  Health risks associated with alcohol consumption II  
Bérczi Bálint Dániel
5  Health risks associated with alcohol consumption III  
Bérczi Bálint Dániel
6  Health risks associated with alcohol consumption IV  
Bérczi Bálint Dániel
7  Preventive substances in wine I  
Dr. Kiss István
8  Preventive substances in wine II  
Dr. Kiss István
9  Role of wine in the prevention of diseases I  
Dr. Kiss István
10 Role of wine in the prevention of diseases II  
Dr. Kiss István
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11 Wine culture in Hungary and in Europe I
   Bérczi Bálint Dániel
12 Wine culture in Hungary and in Europe II
   Bérczi Bálint Dániel

Practices
13 Wine production, consumption and culture I
14 Wine production, consumption and culture II

Seminars

Exam topics/questions
Neptun

Participants
Dr. Kiss István (KIIFAD.A.JPTE)
The Cytoskeletal System

Course director: Dr. Beáta Bugyi, associate professor
Department of Biophysics

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 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

The cytoskeletal system is composed of different proteins networks. The cytoskeleton has versatile structural and functional features, which are essential for almost all cellular processes. The dysfunctioning of the cytoskeleton can often result in pathological alterations of cellular functions, which can lead to diseases. In the first module the course we discuss the components and properties of the cytoskeletal protein networks. The second module lays special emphasis on presenting the pathological alterations of the cytoskeletal system and the underlying diseases.

I. module: Components and functions of the cytoskeleton.
II. module: Pathological alterations and diseases related to the cytoskeleton.
III. module: Biophysical approaches in the investigation of the cytoskeleton.

Conditions for acceptance of the semester

A maximum of three absences, and a passed test or presentation at the end of the semester.

Mid-term exams

Making up for missed classes

None.

Reading material

- Obligatory literature
  - Literature developed by the Department
    - http://biofizika.aok.pte.hu
- Notes
- Recommended literature
  - Jonathon Howard: Mechanics of Motor Proteins and the Cytoskeleton, 2005
- Online materials on departmental website (http://biofizika.aok.pte.hu)

Lectures

1. Introduction
   Dr. Bugyi Beáta
2. Structural and dynamic properties of cytoskeletal filaments.
   Dr. Bugyi Beáta
3. Biological functions of the cytoskeletal filament systems 1.
   Dr. Bugyi Beáta
4. Biological functions of the cytoskeletal filament systems 2.
   Dr. Bugyi Beáta
   Dr. Kengyel András Miklós
   Dr. Kengyel András Miklós
   Dr. Kengyel András Miklós
   Dr. Bugyi Beáta
   Dr. Bugyi Beáta
10 Cytoskeletal filament systems as potential therapeutic targets.
   Dr. Bugyi Beáta
11 Case study 1: cardiac myosin activation, a potential therapeutic approach for systolic heart failure.
   Dr. Bugyi Beáta
12 Case study 2: Keratin mutations in Epidermolysis Bullosa Simplex.
   Dr. Bugyi Beáta
13 Students’ presentations.
   Dr. Bugyi Beáta
14 Students’ presentations.
   Dr. Bugyi Beáta

Practices

Seminars

Exam topics/questions

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

Participants
OSF-DNM

ROLE OF DIET AND NUTRITION IN MEDICINE

Course director:

Dr. István Kiss, professor
Department of Public Health Medicine

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

Course director: Dr. István Kiss, professor
Department of Public Health Medicine

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

Number of hours/semester:
12 lectures + 0 practices + 2 seminars = total of 14 hours

Course headcount limitations (min.-max.): 5 – 30
Prerequisites: none

Topic

The course intends to explain the role and significance of diet and nutrition in the disease prevention and therapy. At first the course will describe the methods of nutritional epidemiology, then the possibilities of dietotherapy will be systematically discussed in the prevention and therapy of diseases of public health significance (such as cardiovascular diseases, cancer and diseases of the gastrointestinal system). The clinicians and GPs often see cases (e. g. consequences of an inadequate weight loss diet) where knowledge on health effects of nutritional habits and different (fad) diets is required for the solution of the problem. Therefore the students will receive appropriate information on different special diets, nutritional habits, and the nutritional requirements, dietotherapeutic characteristics in different physiological states, such as pregnancy or elderly.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

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

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 Place of dietotherapy in medicin. Definition, goal and development of dietotherapy. Nutritional epidemiology I.
   Wolher Veronika
2 Conception, nutrition during pregnancy. Nutrition in different ages-groups: from infancy to elderly.
   Wolher Veronika
3 Food allergy and intolerance, diagnostic diets. Nutrition and cancer.
   Wolher Veronika
4 Prevention and dietotherapy of the diseases of the gastrointestinal system. I.
   Wolher Veronika
5 Prevention and dietotherapy of the diseases of the gastrointestinal system. II.
   Wolher Veronika
6 Prevention and dietotherapy of the diseases of the gastrointestinal system. III.
   Wolher Veronika
7 Nutrition in diabetes.
   Wolher Veronika
8 Dietotherapy of kidney diseases.
   Wolher Veronika
9 Dietotherapy in cardiovascular diseases.
   Wolher Veronika
10 Nutritional aspects of metabolic and endocrine diseases.
   Wolher Veronika
11 Dietotherapy in the diseases of the locomotor system.
   Wolher Veronika
   Wolher Veronika
Practices

Seminars

2. Overweight, obesity, dietary deficiencies, nutritional disorders, prevention. Artificial feeding, feeding formulas.

Exam topics/questions

Neptun

Participants

Wolher Veronika (WOEQAALPTE)
**OSF-EGN  EPIGENETICS - NON-GENETIC INHERITANCE AND ITS MEDICAL ASPECTS**

**Course director:**

**DR. ISTVÁN KISS, professor**

Department of Public Health Medicine

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

**Number of hours/semester:** 12 lectures + 0 practices + 2 seminars = total of 14 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**

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 15% (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 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
   Bérczi Bálint Dániel
2. Are the environmental effects heritable (nutrition, physical activity and stress)? Epigenetics and diseases. Twin studies (The EpiTwin Project).
   Bérczi Bálint Dániel
3. DNA-methylation I.
   Dr. Rákosy Zsuzsa
4. DNA-methylation II.
   Dr. Rákosy Zsuzsa
5. Histone modifications and chromatin organisation. How does the epigenom inherit?
   Bérczi Bálint Dániel
6. The role of epigenetics in cancer diagnostics and therapy.
   Bérczi Bálint Dániel
7. Regulatory non-coding RNAs (siRNAs, microRNAs). Therapeutical application of exogenous siRNAs and the possible side-effects.
   Bérczi Bálint Dániel
8. The microRNA regulation - therapy or prevention? The link between RNA-interference and epigenetics.
   Bérczi Bálint Dániel
   Dr. Rákosy Zsuzsa
    Dr. Rákosy Zsuzsa
11 Research methods in epigenetics (MethyLight).
   Dr. Kiss István
12 Investigating the epigenome. Methylation DNA (MeDIP) and chromatin immunoprecipitation (ChIP) technique. DNA editing with RNAs (CRISPR systems).
   Dr. Kiss István

Practices

Seminars

1 What holds the future for us?
2 The future perspectives of personalized medicine. Involvemen of epigenetics.

Exam topics/questions

Neptun

Participants

Bérczi Bálint Dániel (BEBlABT.PTE)
OSF-EMA | BASIC PRINCIPLES OF ELECTRON MICROSCOPY IN CLINICAL PRACTICE AND BIOLOGICAL RESEARCH

Course director: DR. HAJNALKA GABRIELLA ÁBRAHÁM, associate professor
Central Electron Microscope Laboratory

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

Number of hours/semester: 24 lectures + 4 practices + 0 seminars = total of 28 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
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 etc.
   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. Electron microscopy of formaldehyde fixed and paraffin embedded materials.
   Dr. Seress László Antal
4  Samples taken by autopsy or biopsy. Perfusion of experimental animals for electron microscopy.
   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
    Dr. Ábrahám Hajnalka Gabriella
11 Ultrastructures of neurons (axon, dendrite, synapses)
   Dr. Seress László Antal
12 Ultrastructure of glial cells
   Dr. Seress László Antal
13 The ultrastructure of kidney
   Dr. Ábrahám Hajnalka Gabriella
14 The ultrastructure of the liver
   Dr. Ábrahám Hajnalka Gabriella
15 Ultrastructure of the muscle.
   Dr. Ábrahám Hajnalka Gabriella
16 Necrotic and apoptotic changes in the dying cells. Dark cells.
   Dr. Ábrahám Hajnalka Gabriella
17 Combined light and electron microscopic methods, such as Golgi/EM, Timm/EM, immunocytochemistry/EM.
   Dr. Seress László Antal
18 Combination of degeneration and axon transport methods with electron microscopy.
   Dr. Seress László Antal
19 Ultrastructure of bacteria and viruses.
   Dr. Ábrahám Hajnalka Gabriella
20 Cytoskeleton
   Dr. Seress László Antal
21 Intercellular connections
   Dr. Seress László Antal
22 The use of EM in the biological research I
   Dr. Seress László Antal
23 The use of EM in biological research II
   Dr. Seress László Antal
24 Examination
   Dr. Seress László Antal

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

Seminars

Exam topics/questions
Exam topics are the same as the lecture topics

Participants
Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Seress László Antal (SELMAAO.PTE)
OSF–ENL OPPORTUNITIES AND METHODS FOR HEALTH EDUCATION FOR MEDICAL, PHARMACEUTICAL AND DENTAL PROFESSIONALS

Course director: DR. ISTVÁN SZILÁRD, honorary professor
Department of Operational Medicine

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

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

Making up for missed classes

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.DUAVr1Sn.dpuf


http://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/health_extension_trainees/Intro_HealthEducation.pdf

http://samples.jbpub.com/9780763796112/96112_CH01_FINAL.pdf

Health Education for Adults
http://www.unesco.org/education/uie/confintea/pdf/

Lectures

1 1. Introduction. Overview of the course. Historical background, theories and fundamentals of health education. National and international health educational guidelines, programs, governmental and civil initiatives. Aims of health education and its role in increasing health awareness and literacy and in improving attitudes and health behaviour.
Marek Erika

2 1. Introduction. Overview of the course. Historical background, theories and fundamentals of health education. National and international health educational guidelines, programs, governmental and civil initiatives. Aims of health education and its role in increasing health awareness and literacy and in improving attitudes and health behaviour.
Marek Erika
2. Methods of health education 1: designing, preparing and organising programs. Characteristics of the target groups for health education: the role of differences in gender, age, religion and cultural background. Special aspects to consider when designing programs for kindergartners, juniors, adolescents, elders, romas, muslims, etc. Preferred informational channels. Improving cultural competencies.
Marek Erika

2. Methods of health education 1: designing, preparing and organising programs. Characteristics of the target groups for health education: the role of differences in gender, age, religion and cultural background. Special aspects to consider when designing programs for kindergartners, juniors, adolescents, elders, romas, muslims, etc. Preferred informational channels. Improving cultural competencies.
Marek Erika

Marek Erika

Marek Erika

Marek Erika

Marek Erika

Marek Erika

Marek Erika

6. 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.
Marek Erika

6. 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.
Marek Erika

7. Health education in kindergartens and schools: the opportunities and tasks of physicians, modelprograms, health programs at schools, sexual education of adolescents: issues to cover, methods and tools.
Marek Erika

7. Health education in kindergartens and schools: the opportunities and tasks of physicians, modelprograms, health programs at schools, sexual education of adolescents: issues to cover, methods and tools.
Marek Erika

8. 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.
Marek Erika

8. 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.
Marek Erika

Dr. Rinfel József

Dr. Rinfel József
10. Pharmacy as scene for health education: opportunities and responsibilities of pharmacists in health education during informing patients. The importance of rapid, valid briefing of patients and the appropriate communication.
Dr. Katz Zoltán

Marek Erika

Marek Erika

13. 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

14. Presentation, discussion and of students health educational programs. Assessment.
Marek Erika

Practices
Seminars
Exam topics/questions
Participants
Dr. Katz Zoltán (KAZMAAO.PTE), Dr. Rinform József (REJPAAP.PTE), Dr. Szilárd István (SZIQAAP.PTE), Marek Erika (MAEAAA.TJPTE)
Use of the EPR Spectroscopy on Biological Structures

Course director: Dr. Kornélia Farkas-Borbáš, assistant professor
Institute of Bioanalysis

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

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

Course headcount limitations (min.-max.): 2 – 6

Prerequisites: OSA-BII 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 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 1.
   Borbásné Dr. Farkas Kornélia
2 The basics of EPR Spectroscopy 2.
   Borbásné Dr. Farkas Kornélia
3 The basic features of EPR Spectrometer
   Borbásné Dr. Farkas Kornélia
4 Spin labels and labeling methods
   Borbásné Dr. Farkas Kornélia
5 Free radicals - spin trapping
   Borbásné Dr. Farkas Kornélia
6 Membrane structures and their labeling
   Borbásné Dr. Farkas Kornélia
7 Other biological structures and their labeling
   Borbásné Dr. Farkas Kornélia

Practices

1 Way of registration, registration and analyze of an EPR spectra 1.
2 Way of registration, registration and analyze of an EPR spectra 2.
3 Measurements of membrane dynamics 1.
4 Measurements of membrane dynamics 2.
5 Labeling and measuring of other biological structures 1.
6 Labeling and measuring of other biological structures 2.
7 Spin trapping
Seminars

Exam topics/questions

Participants

Borbásné Dr. Farkas Kornélia (FAKAAA.T.JPTE), Dr. Dergez Timea (DETCAA.T.JPTE), Dr. Visegrády Balázs (VIBAAB.T.JPTE)
OSF-EUA \hspace{1cm} \textbf{Basic Principles of Health Care Provision in the European Union}

\textbf{Course director:} \hspace{1cm} \textbf{Dr. István Szilárd}, honorary professor
Department of Operational Medicine

\begin{itemize}
\item 2 credit \hspace{1cm} midsemester grade \hspace{1cm} Optional subject \hspace{1cm} both semesters semester \hspace{1cm} recommended semester: 2
\item Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
\item Course headcount limitations (min.-max.): 1 – 20 \hspace{1cm} Prerequisites: none
\end{itemize}

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

\textbf{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.

\textbf{Conditions for acceptance of the semester}

Maximum of 15 % absence allowed

\textbf{Mid-term exams}

Making up for missed classes

Based on individual consultation with the lecturer.

\textbf{Reading material}

- \textit{Obligatory literature}
- \textit{Literature developed by the Department}


- \textit{Notes}
- \textit{Recommended literature}

\textbf{Lectures}

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

3 Health challenges of the European Union, morbidity and mortality structure, focusing on vulnerable groups: migrants, ethnic minorities
   \hspace{1cm} Dr. Szilárd István

4 Health challenges of the European Union, morbidity and mortality structure, focusing on vulnerable groups: migrants, ethnic minorities
   \hspace{1cm} Dr. Szilárd István

5 Trends and epidemiology of chronic, non communicable diseases in the Member States of the European Union
   \hspace{1cm} Dr. Berényi Károly

6 Trends and epidemiology of chronic, non communicable diseases in the Member States of the European Union
   \hspace{1cm} Dr. Berényi Károly

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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

Primary health care (PHC) in the European Union  
Dr. Szilárd István

Primary health care (PHC) in the European Union  
Dr. Szilárd István

Cross-border health care  
Dr. Goolesorkhi Kia

Cross-border health care  
Dr. Goolesorkhi Kia

Migration-related health challenges  
Dr. Szilárd István

Migration-related health challenges  
Dr. Szilárd István

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. Katz Zoltán

Special and current challenges of health care and assistance related to ethnic minorities  
Dr. Katz Zoltán

Migrant- and ethnic minority-friendly health care system  
Marek Erika

Migrant- and ethnic minority-friendly health care system  
Marek Erika

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

Right based access to the health care: health related human right recommendations and declarations of the European Union  
Marek Erika

Right based access to the health care: health related human right recommendations and declarations of the European Union  
Marek Erika

Practices

Seminars

Exam topics/questions

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

Participants

Dr. Berényi Károly (BEKFABO.PTE), Dr. Feiszt Zsófia (FEZFAEO.PTE), Dr. Katz Zoltán (KAZMAAO.PTE), Dr. Szilárd István (SZIQAAP.PTE), Marek Erika (MAEAAA.TJPTE)
The basic knowledge about phytotherapy, the students’ awareness of the phytotherapy or their activities and tasks of the races.

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
  MeetStreet
- Recommended literature

Lectures
1  The history of natural medicine, philosophical foundations. The phytotherapy as a natural healing method.
   Kovácsné Kósa Judit
2  Historical overview of the development of phytotherapy. The location of the phytotherapy within classical methods of Natural Medicine.
   Kovácsné Kósa Judit
3  The regulation of Natural Medicine. Basic definitions in the phytotherapy.
   Kovácsné Kósa Judit
4  Herbs I: Rules of collection and storage; Typical quality defects.
   Kovácsné Kósa Judit
5  Herbs II: Drug Testing; Protected and endangered species.
   Kovácsné Kósa Judit
6  Healthy food plants, herbs, mushrooms and juices.
   Kovácsné Kósa Judit
7  Classification by substances I
   Kovácsné Kósa Judit
8  Classification by substances II
   Kovácsné Kósa Judit
9  Classification by substances III
   Kovácsné Kósa Judit
10 Classification by substances IV
   Kovácsné Kósa Judit
11 Causal and symptomatic treatment in Phytotherapy.
   Kovácsné Kósa Judit
12 Making prescription. Herbs and their underactions.
   Kovácsné Kósa Judit
13 Parts of the treatment plan and its practical application. The treatment from ethical perspective.
   Kovácsné Kósa Judit
14 The priority areas of Phytotherapy: Apitherapy, Aromatherapy and the Bach Flower Therapy.
   Kovácsné Kósa Judit
Practices
Seminars
Exam topics/questions
MeetStreet
Participants
OSF-GSE | BASICS OF MEDICAL EQUIPMENT

Course director: Dr. Judit Pongrácz, professor
Department of Pharmaceutical Biotechnology

1 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 2
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
The aims of the course to give basic knowledge about the next topics: how can use and prescribing medical equipment.

Conditions for acceptance of the semester
Completing the test at 51% success.

Mid-term exams
Writing test
Making up for missed classes
None

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

Lectures
1. Definition and classification of medical equipment
   Kovácsné Kósa Judit
2. Indication of medical equipment
   Kovácsné Kósa Judit
3. Quality requirements for medical equipment
   Kovácsné Kósa Judit
4. Proper use of medical equipment; basic hygiene rules
   Kovácsné Kósa Judit
5. Basics of social insurance
   Kovácsné Kósa Judit
6. Medical equipment - close to the body
   Kovácsné Kósa Judit
7. Medical equipment - remote from the body
   Kovácsné Kósa Judit
8. Application of medical equipment - choose with patient
   Kovácsné Kósa Judit
9. Compliance of medical equipment
   Kovácsné Kósa Judit
10. Taking of measurements - the rules
    Kovácsné Kósa Judit
11. Types of medical equipment in the practice I. - Musculoskeletal disorders and skin
    Kovácsné Kósa Judit
12. Types of medical equipment in the practice II. - Breast disease and respiratory diseases
    Kovácsné Kósa Judit
13. Types of medical equipment in the practice III. - Metabolic diseases, circulatory diseases and painkilling
    Kovácsné Kósa Judit
14. Types of medical equipment in the practice IV. - Gastro-intestinal diseases, diseases of urinary and genital system
    Kovácsné Kósa Judit
Practices
Seminars
Exam topics/questions
Participants
OSF-HEV  MEDICAL ASPECTS OF HUMAN EVOLUTION

Course director:  
DR. LÁSZLÓ MÁRK, associate professor  
Department of Biochemistry and Medical Chemistry

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

Number of hours/semester:  
26 lectures + 0 practices + 0 seminars = total of 26 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

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  
Anatomy of Homo sapiens.  
Dr. Reglődi Dóra

12  
Anatomy of Homo sapiens.  
Dr. Reglődi Dóra
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.

Participants
OSF-HSA  

**HUMANITARIAN ASSISTANCE AND ITS MEDICAL AND HEALTH CARE ASPECTS**

**Course director:**  
DR. ISTVÁN SZILÁRD, honorary professor  
Department of Operational Medicine

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

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

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**

írásbeli teszt

**Making up for missed classes**

Based on independent consultation.

**Reading material**

- **Obligatory literature**

  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. Humanitarian Assistance and International Development Cooperation
   The concept of humanitarian assistance: humanitarian crisis, complex crisis. The concept and characteristic features of international development cooperation. The fundamental differences be (BSZA)
   Dr. Szilárd István
2. Humanitarian Assistance and International Development Cooperation
   The concept of humanitarian assistance: humanitarian crisis, complex crisis. The concept and characteristic features of international development cooperation. The fundamental differences be (BSZA)
   Dr. Szilárd István
3. The Basic Roles of Health Care and Humanitarian Assistance, its human resource and material conditions for acute cases in far geographical regions. Coordination and completion of on-site aid
   Dr. Szilárd István
4. The Basic Roles of Health Care and Humanitarian Assistance, its human resource and material conditions for acute cases in far geographical regions. Coordination and completion of on-site aid
   Dr. Szilárd István
5. Migration and Humanitarian Assistance
   The rights of and protection for refugees and IDPs, caring for them, the challenges of setting up and securing provisions for camps (BSZA: Dr. Szilágyi Béla)
   Dr. Szilárd István
6. Migration and Humanitarian Assistance
   The rights of and protection for refugees and IDPs, caring for them, the challenges of setting up and securing provisions for camps (BSZA: Dr. Szilágyi Béla)
   Dr. Szilárd István
   Dr. Katz Zoltán
   Dr. Katz Zoltán
9. Healthcare at the Hungarian Refugee Stations, Protected Quarters: theory and practice of migrant-specific health care (vaccination, health screening tests, etc.)
   Marek Erika
10. Healthcare at the Hungarian Refugee Stations, Protected Quarters: theory and practice of migrant-specific health care (vaccination, health screening tests, etc.)
    Marek Erika
11. The Nature of Health Care Concerning Migrants and Multicultural Environment (the role of language, religion, beliefs in healthcare
    Dr. Baráth Árpád
12. The Nature of Health Care Concerning Migrants and Multicultural Environment (the role of language, religion, beliefs in healthcare
    Dr. Baráth Árpád
13. Health Aspects of Humanitarian Tasks Carried Out amongst Ethnic Minorities
    Dr. Szilárd István
14. Health Aspects of Humanitarian Tasks Carried Out amongst Ethnic Minorities
    Dr. Szilárd István
15. Occupational Education, Monitoring, Training and if Necessary Rehabilitation of the Humanitarian Caregivers
    Dr. Berényi Károly
    Dr. Berényi Károly
17. Humanitarian and Human Rights Aspects of Trafficking in Human Beings. Humanitarian Assistance in the Light of International Law, of International Politics and of International Political Economy
    The concept of trafficking in human beings, its victims, an o (BSZA: Dr. Szilágyi Béla)
    Dr. Szilárd István
    The concept of trafficking in human beings, its victims, an o (BSZA: Dr. Szilágyi Béla)
    Dr. Szilárd István
19 The Participants of the Process of Humanitarian Assistance
The characteristic features of donors involved in humanitarian assistance; the interests and the features characterizing the aid work of some larger donor states; the aid provided by the UNO-famil (BSZA: Gál Dávid)
Dr. Szilárd István

20 The Participants of the Process of Humanitarian Assistance
The characteristic features of donors involved in humanitarian assistance; the interests and the features characterizing the aid work of some larger donor states; the aid provided by the UNO-famil (BSZA: Gál Dávid)
Dr. Szilárd István

21 Civil Society Organizations in Humanitarian Assistance
The types and characteristic features of aid organizations; the tasks and role of local organizations and international aid organizations; the advantages and disadvantages of civil society organizatio (BSZA: Gál Dávid)
Dr. Szilárd István

22 Civil Society Organizations in Humanitarian Assistance
The types and characteristic features of aid organizations; the tasks and role of local organizations and international aid organizations; the advantages and disadvantages of civil society organizatio (BSZA: Gál Dávid)
Dr. Szilárd István

23 Health Care Challenges in Humanitarian Crises; case study from the perspective of a volunteering doctor (BSZA: Dr. Kovács Ildikő/ Dr. Papp István)
Dr. Szilárd István

24 Health Care Challenges in Humanitarian Crises; case study from the perspective of a volunteering doctor (BSZA: Dr. Kovács Ildikő/ Dr. Papp István)
Dr. Szilárd István

25 Case Study: the Experience Gathered by HBAid in Humanitarian Crises; the lessons learned from and the best practices of international aid and development (BSZA: Szenczy Sándor)
Dr. Szilárd István

26 Case Study: the Experience Gathered by HBAid in Humanitarian Crises; the lessons learned from and the best practices of international aid and development (BSZA: Szenczy Sándor)
Dr. Szilárd István

27 Social Assistance Among Homeless People and Drug Addicts
Dr. Szilárd István

28 Social Assistance Among Homeless People and Drug Addicts
Dr. Szilárd István

Practices

Seminars

Exam topics/questions
The exam will be based on the recommended readings and the lectures.

Participants
OSF-IZM  Molecular Basis of Muscle Function
Course director: DR. DÉNES LÓRINCZY, professor
Department of Biophysics

2 credit • midterm grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 1 – 36  Prerequisites: none

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

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 ELMI.
   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

129
Biochemical basis and energetics of muscle function.
Dr. Lőrinczy Dénes

Bioelectrical phenomena. Action potentials.
Dr. Lőrinczy Dénes

Nernst equation, G-H-K equation.
Dr. Lőrinczy Dénes

Voltage- and patch-clamp techniques.
Dr. Lőrinczy Dénes

Excitation-contraction coupling.
Dr. Lőrinczy Dénes

Structure of muscle proteins (actin and myosin, actomyosin complex).
Dr. Lőrinczy Dénes

Discussion of sliding model in details (x-ray diffraction).
Dr. Lőrinczy Dénes

Molecular dynamic background of muscle contraction (EPR spectroscopy)
Dr. Lőrinczy Dénes

Muscle in the sport and rehabilitation (wellness).
Dr. Lőrinczy Dénes

Principle of differential scanning calorimetry.
Dr. Lőrinczy Dénes

Thermodynamic background of muscle contraction (DSC results)
Dr. Lőrinczy Dénes

Muscle and levers in locomotion.
Dr. Lőrinczy Dénes

Free consultation from the topics of course (discussion of any problem).
Dr. Lőrinczy Dénes

Free consultation from the topics of course (discussion of any problem).
Dr. Lőrinczy Dénes

Written test.
Dr. Lőrinczy Dénes

Written test.
Dr. Lőrinczy Dénes

Discussion of the test, final evaluation of the course.
Dr. Lőrinczy Dénes

Discussion of the test, final evaluation of the course.
Dr. Lőrinczy Dénes

Practices
Seminars
Exam topics/questions
Written test
Participants
OSF-JEA  DISEASES OF SIGNAL TRANSDUCTION

Course director: GYÖRGY SÉTÁLÓ DR. JR., associate professor
Department of Medical Biology

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

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

Course headcount limitations (min.-max.): 5 – 25

Prerequisites: OSA-MB1 completed + OSA-MB2 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  Introduction to the topics. Types of inter- and intracellular signaling.
   ifj. Dr. Sétáló György
2  Second messengers. The cAMP-system in cholera, pertussis and anthrax.
   Dr. Palkovics Tamás
3  The PKA, PKB and phospholipase C-system. Intracellular calcium. Tumor promotion and the PKC-family.
   ifj. Dr. Sétáló György
4  Catalytic receptors and their pathological alterations in diseases.
   ifj. Dr. Sétáló György
5  Insulin signaling and its aspects in certain types of diabetes mellitus.
   ifj. Dr. Sétáló György
6  Cytokines. NFκB and inflammation.
   Dr. Mikó Éva
7  First test exam.
   ifj. Dr. Sétáló György
8  Stress signaling and the consequences of too much stress. Heatshock proteins in signaling.
   Dr. Bátor Judit
9  Signaling of apoptosis and its alterations in disease.
   Dr. Pap Marianna
10 Cell-cell and cell-matrix connections and their pathological relevance.
    ifj. Dr. Sétáló György
11 The role of steroids in signaling and in certain diseases.
    ifj. Dr. Sétáló György
12 Integrin signaling and metastasis
    Dr. Berta Gergely
13 Signaling in development. Malformations.
    Dr. Ábrahám Hajnalka Gabriella
14 Second test exam.
   ifj. Dr. Sétáló György
Practices
Seminars

Exam topics/questions
Multiple-choice test questions based on the actually presented materials of the course.

Participants
Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Bátor Judit (BAJFAAO.PTE), Dr. Berta Gergely (BEGFADO.PTE), Dr. Mikó Éva (MIEFAAO.PTE), Dr. Palkovics Tamás (PATHAAO.PTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Sétáló György (SEGGAOO.PTE)
Table: OSF-KTE - Different Nations', Religions' Dietary Habits in Nutritional and Health Science Aspects

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. TIMEA VARJAS, assistant professor</th>
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<tr>
<td>Department of Public Health Medicine</td>
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| 1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2 |
| Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours |
| Course headcount limitations (min.-max.): 3 – 30 |
| Prerequisites: none |

**Topic**

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
   Raposa László Bence
2. Overview of the Mediterranean life-philosophy and gastronomy, nutritional and health science aspects
   Raposa László Bence
3. Anglo-Saxon areas: presentation of the characteristics of the Russian eating habits
   Raposa László Bence
4. Benelux characteristics, methods of preparing food, nutritional and health science aspects
   Raposa László Bence
5. Far Eastern cuisine overview, epidemiological aspects
   Raposa László Bence
6. Scandinavian countries; typical eating habits, nutritional and health science aspects
   Raposa László Bence
7. American eating habits'; impact on obesity and related illnesses
   Raposa László Bence
8. Bible and nutrition, the Catholic religion, fasting habits
   Raposa László Bence
9. Differences between Christian and Christian eating habits
   Raposa László Bence
10. The Islamic faith and the basics of Islam, Ramadan, the Arabic countries; nutritional habits
    Raposa László Bence
11. The Jewish religious life, Jewish food
    Raposa László Bence
12. Community of Krishna conscious believers, diet of Krishna conscious believers, the teachings of Ayurveda
    Raposa László Bence
13 Summary
   Raposa László Bence
14 Exam, test
   Raposa László Bence

Practices
Seminars
Exam topics/questions
Neptun
Participants
OSF-MGY  MEDICINAL PLANTS IN THE MECSEK MOUNTAIN - FIELD STUDY 1
Course director: DR. NÓRA PAPP, associate professor
Department of Pharmacognosy

2 credit • midterm 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 therapeutic 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
Downloading of lectures in Neptun.

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 (Pellérő)
10. Identification of medicinal plants in swamp (Pellérő)
11. Identification of medicinal plants in swamp (Pellérő)
12. Identification of medicinal plants in swamp (Pellérő)

Seminars

Exam topics/questions

According to the topics of the course.

Participants

Dr. Papp Nóra (PANAAA.T.JPTE)
OSF-MMO  METHODS IN MOLECULAR BIOLOGY AND THEIR APPLICATIONS IN MEDICAL PRACTICE

Course director:  DR. MARIANNA PAP, associate professor  
Department of Medical Biology

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester:  28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.):  1 – 0  Prerequisites:  OSA-MB1 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 the methods mentioned in Molecular cell biology obligatory subject in more details; furthermore interesting, new methods will be explained as well. We highlight the importance of the methods and applicability in research and diagnosis of diseases.

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  Maintenance and manipulation of cell cultures  
   Dr. Pap Marianna
2  Maintenance and manipulation of cell cultures  
   Dr. Pap Marianna
3  Isolation and fractionation of DNA, RNA and proteins  
   Dr. Pap Marianna
4  Isolation and fractionation of DNA, RNA and proteins  
   Dr. Pap Marianna
5  Nucleic acid modifying enzymes  
   Dr. Pap Marianna
6  Nucleic acid modifying enzymes  
   Dr. Pap Marianna
7  PCR, RT-PCR  
   Dr. Pap Marianna
8  PCR, RT-PCR  
   Dr. Pap Marianna
9  Next generation sequencing  
   Dr. Pap Marianna
10  Next generation sequencing  
    Dr. Pap Marianna
11  Hybridization techniques  
    Dr. Pap Marianna
12  Hybridization techniques  
    Dr. Pap Marianna
13 Vectors, transformation and transfection  
Dr. Pap Marianna  
14 Vectors, transformation and transfection  
Dr. Pap Marianna  
15 Cloning and expression systems  
Dr. Pap Marianna  
16 Cloning and expression systems  
Dr. Pap Marianna  
17 Mutagenesis, gene silencing  
Dr. Pap Marianna  
18 Mutagenesis, gene silencing  
Dr. Pap Marianna  
19 Analysis of DNA methylation  
Dr. Pap Marianna  
20 Analysis of DNA methylation  
Dr. Pap Marianna  
21 Genome editing  
Dr. Pap Marianna  
22 Genome editing  
Dr. Pap Marianna  
23 Analysis of proteins  
Dr. Pap Marianna  
24 Analysis of proteins  
Dr. Pap Marianna  
25 Analysis of protein interactions  
Dr. Pap Marianna  
26 Analysis of protein interactions  
Dr. Pap Marianna  
27 Radioactive isotopes used in molecular cell biology  
Dr. Pap Marianna  
28 Exam  
Dr. Pap Marianna

Practices

Seminars

Exam topics/questions

Participants
ANATOMICAL TERMINOLOGY FOR STUDENTS OF DENTISTRY

Course director: Gabriella Habel, language teacher
Department of Languages for Specific Purposes

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

Number of hours/semester:
- 0 lectures + 0 practices + 28 seminars = total of 28 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 anatomical terms supporting the studies of anatomy.

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
- Notes
- Recommended literature

University script

Lectures
Practices
Seminars

1. Structure of Anatomical terms
2. Structure of Anatomical Terms
3. Anatomical Terminology of the Tooth. Oral cavity
5. Body Planes, Anatomical Directions, Surface Features of Bones
6. Body Planes, Anatomical Directions, Surface Features of Bones
7. Anatomical Terminology of the Upper Extremity. Bones, Joints
8. Anatomical Terminology of the Upper Extremity. Bones, Joints
10. Anatomical Terminology of the Shoulder Girdle. Bones, Joints
15. Anatomical Terminology. Vertebrae, Sternum, Costae
17. Anatomical Terminology of the Muscular System
18. Anatomical Terminology of the Muscular System
22. Anatomical Terminology of the Skull. External Cranial Base
23. Anatomical Terminology of the Skull. Palatine, Sphenoid, Temporal, Occipital Bones
27. Test paper 2.
Exam topics/questions

Participants

Hável Gabriella (HAGTAAP.PTE)
OSF-N08  CLINICAL TERMINOLOGY FOR STUDENTS OF DENTISTRY

Course director: GABRIELLA HÁBEL, language teacher
Department of Languages for Specific Purposes

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 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 focusing on dental medical terms.

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 instructor

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

Lectures
Practices
Seminars
1 Structure of clinical terms, synonymous Greek equivalents
2 Structure of clinical terms, synonymous Greek equivalents
3 Dental specialties. Implantology, orthodontics, periodontics..
4 Dental specialties. Implantology, orthodontics, periodontics..
5 Patient examination in dentistry. Case reports
6 Patient examination in dentistry. Case reports
7 Dental emergencies. Clinical case reports
8 Dental emergencies. Clinical case reports
9 Health problems associated with dental disorders
10 Health problems associated with dental disorders
11 Clinical case reports. Newborn oral pathology
12 Clinical case reports. Newborn oral pathology
13 Test paper 1.
14 Test paper 1.
15 Developmental disorders of the oral cavity
16 Developmental disorders of the oral cavity
17 Inflammations of the oral cavity
18 Inflammations of the oral cavity
19 Dental malpositions
20 Dental malpositions
21 Traumatologic disorders of the oral cavity
22 Traumatologic disorders of the oral cavity
23 Dental surgical interventions
24 Dental surgical interventions
25 Summary of dental medical terms based on authentic diagnoses
26 Summary of dental medical terms based on authentic diagnoses
27 Test paper 2
28 Test paper 2
Exam topics/questions

Participants

Hábel Gabriella (HAGTAAP.PTE)
OSF-NS2  |  NOBEL PRIZE AWARDED CELL BIOLOGY II
---|---
Course director:  | DR. MARIANNA PAP, associate professor
Department of Medical Biology

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

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 1 – 0
Prerequisites: OSA-MB1 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**
Written test on the last week.

**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
11 Genetic control of early embryonic development
   Dr. Pap Marianna
12 Genetic control of early embryonic development
   Dr. Pap Marianna
13 Programmed cell death
   Dr. Pap Marianna
14 Programmed cell death
   Dr. Pap Marianna
15 DNA tumor viruses
   Dr. Pap Marianna
16 DNA tumor viruses
   Dr. Pap Marianna
17 RNA tumor viruses
   Dr. Pap Marianna
18 RNA tumor viruses
   Dr. Pap Marianna
19 Retroviral oncogenes
   Dr. Pap Marianna
20 Retroviral oncogenes
   Dr. Pap Marianna
21 Telomeres and telomerase activity in cancers
   Dr. Pap Marianna
22 Telomeres and telomerase activity in cancers
   Dr. Pap Marianna
23 Human cell- and tissue transplantation
   Dr. Pap Marianna
24 Human cell- and tissue transplantation
   Dr. Pap Marianna
25 In vitro fertilization
   Dr. Pap Marianna
26 In vitro fertilization
   Dr. Pap Marianna
27 The discovery of the green fluorescent protein and its significance in molecular biology
   Dr. Pap Marianna
28 The discovery of the green fluorescent protein and its significance in molecular biology, Exam
   Dr. Pap Marianna

Practices

Seminars

Exam topics/questions

Participants
### OSF-PLH  THE PLACEBO EFFECT

**Course director:**
**TIBOR SZOLCSÁNYI**, assistant professor
Department of Behavioural Sciences

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

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

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**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**

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 The anthropological and evolutionary background of placebo effect
    Dr. Szolcsányi Tibor

11 Pain management through psychological interventions and placebo analgesia
    Dr. Szolcsányi Tibor

12 Ethical implications: how to enhance the placebo effect through improving the physician-patient relationship
    Dr. Szolcsányi Tibor

13 Ethical implications: the possible role of complementary medicine in the enhancement of placebo effect
    Dr. Szolcsányi Tibor

14 Written test
    Dr. Szolcsányi Tibor

Practices

Seminars

Exam topics/questions

Participants
### OSF-ROE

**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

**Course description**

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

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

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**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 of 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, Slavomira Macakova, 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**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Topic</th>
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| 1 | Introduction: ethnic minorities in the EU, related EU policy  
  Dr. Szilárd István |
| 2 | Introduction: ethnic minorities in the EU, related EU policy  
  Dr. Szilárd István |
  Dr. Kiss Zsuzsanna |
  Dr. Kiss Zsuzsanna |
| 5 | Identification of Roma/Gypsy people and its difficulties. Demographic characteristics of the Roma and other minority populations.  
  Dr. Kiss Zsuzsanna |
| 6 | Identification of Roma/Gypsy people and its difficulties. Demographic characteristics of the Roma and other minority populations.  
  Dr. Kiss Zsuzsanna |
| 7 | Certain important epidemiological indicators. Health inequalities.  
  Dr. Kiss Zsuzsanna |
| 8 | Certain important epidemiological indicators. Health inequalities.  
  Dr. Kiss Zsuzsanna |
9 Health culture of Roma communities  
Dr. Baráth Árpád

10 Health culture of Roma communities  
Dr. Baráth Árpád

11 Health determinants  
Dr. Kiss István

12 Health determinants  
Dr. Kiss István

13 WHO Marmot Report: Social determinants of health-tackling health inequalities  
Dr. Szilárd István

14 WHO Marmot Report: Social determinants of health-tackling health inequalities  
Dr. Szilárd István

15 Health characteristics of Roma and other large ethnic communities versus the majority society  
Dr. Katz Zoltán

16 Health characteristics of Roma and other large ethnic communities versus the majority society  
Dr. Katz Zoltán

17 Role of genetic factors on the health status of minorities.  
Dr. Kiss István

18 Role of genetic factors on the health status of minorities.  
Dr. Kiss István

19 Role of environmental and lifestyle factors on the health status of minorities.  
Dr. Kiss Zsuzsanna

20 Role of environmental and lifestyle factors on the health status of minorities.  
Dr. Kiss Zsuzsanna

21 Community level health promotion-theory, examples, contradictions and new endowers  
Marek Erika

22 Community level health promotion-theory, examples, contradictions and new endowers  
Marek Erika

23 Health promotion in ethnic minorities’ communities: the importance of cultural competence in health promotion interventions  
Dr. Szilárd István

24 Health promotion in ethnic minorities’ communities: the importance of cultural competence in health promotion interventions  
Dr. Szilárd István

25 Multicultural competence compliance  
Dr. Baráth Árpád

26 Multicultural competence compliance  
Dr. Baráth Árpád

27 Summary  
Dr. Szilárd István

28 Exam  
Dr. Szilárd István

Practices
Seminars
Exam topics/questions

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

Participants
Dr. Baráth Árpád (BAAFABP.PTE), Dr. Katz Zoltán (KAZMAAO.PTE), Dr. Kiss István (KIIFAD.A.JPTE), Dr. Kiss Zsuzsanna (ORZGAAT.PTE), Dr. Szilárd István (SZIQAAP.PTE), Marek Erika (MAEAAA.T.JPTE)
OSF-SB2  Stanford Lectures II: Sex, Aggression, Schizophrenia

Course director: Dr. Róbert Mátics, associate professor
Department of Behavioural Sciences

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

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 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
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 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  General Introduction
   Dr. Mátics Róbert
3  Twin studies
   Dr. Mátics Róbert
4  Twin studies, discussion
   Dr. Mátics Róbert
5  IQ and birth order
   Dr. Mátics Róbert
6  IQ and birth order, discussion
   Dr. Mátics Róbert
7  Recognizing relatives: cellular level
   Dr. Mátics Róbert
8  Recognizing relatives: cellular level, discussion
   Dr. Mátics Róbert
Recognizing relatives: social anosmia  
Dr. Mátics Róbert

Recognizing relatives: social anosmia, discussion  
Dr. Mátics Róbert

Recognizing Relatives: intrasexual conflicts  
Dr. Mátics Róbert

Recognizing Relatives: intrasexual conflicts, discussion  
Dr. Mátics Róbert

Human Sexual Behaviour: proximal and distal causes  
Dr. Mátics Róbert

Human Sexual Behaviour: proximal and distal causes, discussion  
Dr. Mátics Róbert

Human Sexual Behaviour: female orgasm  
Dr. Mátics Róbert

Human Sexual Behaviour: female orgasm, discussion  
Dr. Mátics Róbert

Human Sexual Behaviour: non-reproductive sex  
Dr. Mátics Róbert

Human Sexual Behaviour: non-reproductive sex, discussion  
Dr. Mátics Róbert

Human Sexual Behaviour: human-specific patterns  
Dr. Mátics Róbert

Human Sexual Behaviour: human-specific patterns, discussion  
Dr. Mátics Róbert

Human sexual behaviour: reproductive arrest  
Dr. Mátics Róbert

Human sexual behaviour: reproductive arrest, discussion  
Dr. Mátics Róbert

Aggression: the right kind of violence  
Dr. Mátics Róbert

Aggression: the right kind of violence, discussion  
Dr. Mátics Róbert

Aggression: reconciliation  
Dr. Mátics Róbert

Aggression: reconciliation, discussion  
Dr. Mátics Róbert

Summary, questions, discussion, exam  
Dr. Mátics Róbert

Summary, questions, discussion, exam  
Dr. Mátics Róbert

Practices

Seminars

Exam topics/questions

Participants
OSF-SMP  PATHOLOGY OF THE CELL NUCLEUS

Course director: Dr. LÁSZLÓ KOMÁROMY, professor
Department of Medical Biology

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 1 – 200
Prerequisites: OSA-MB1 completed

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

Topic

The main significance of this course to demonstrate a basic knowledge of cell pathology which is giving fundamental information for preclinical and clinical subjects. The other goal is to demonstrate the results of ultrastructural morphology and molecular biology at cell-pathological level. The course is discussing the functional-morphological changes and alterations of cell nucleus components in different pathological conditions (including the effect of therapeutical procedures). The changes and alterations are estimated as a results of diseases or experimental pathological procedures and methods. The functional-morphological changes are estimated and analyzed on the basis of molecular biological processes. The lectures are summarizing in short the main changes of cytoplasmic structures in the different pathological conditions. The course pays attention to functional morphological changes appearing in the tumor cells especially.

Conditions for acceptance of the semester

25% absences are allowed and successful exam.

Mid-term exams

Making up for missed classes

None.

Reading material

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

Ghadially, F.N.: Ultrastructural Pathology of the Cell and Matrix
Constantinides, P.: Ultrastructural Pathology
Cooper, G.M.: The Cell. A Molecular Approach
Szeberényi J.: Experiments in Molecular Cell Biology
Relevant publications (given during the course) and hand-outs of lectures.

Lectures

1 Methods of functional morphology. General outlines Light microscopical techniques 1
   Dr. Komáromy László
2 Methods of functional morphology. General outlines Light microscopical techniques 2
   Dr. Komáromy László
3 Methods of functional morphology. General outlines. Electron microscopic techniques 1
   Dr. Komáromy László
4 Methods of functional morphology. General outlines. Electron microscopic techniques 2
   Dr. Komáromy László
5 Ultrastructure of nuclear periphery 1
   Dr. Komáromy László
6 Ultrastructure of nuclear periphery 2
   Dr. Komáromy László
7 Protein import to the cell nucleus (regulation and troubles) 1
   Dr. Komáromy László
8 Protein import to the cell nucleus (regulation and troubles) 2
   Dr. Komáromy László
9 RNA export to cytoplasm (regulation, troubles) 1
   Dr. Komáromy László
10 RNA export to cytoplasm (regulation, troubles) 2
   Dr. Komáromy László
11 New data of chromatin organization 1
   Dr. Komáromy László
12 New data of chromatin organization 2
   Dr. Komáromy László
13 Changes of chromatin structures in different pathological conditions 1
   Dr. Komáromy László
14 Changes of chromatin structures in different pathological conditions 2
   Dr. Komáromy László
15 Semester test 1
   Dr. Komáromy László
16 Semester test 2
   Dr. Komáromy László
17 Alterations of nuclear matrix 1
   Dr. Komáromy László
18 Alterations of nuclear matrix 2
   Dr. Komáromy László
19 Changes and alterations in structure and function of nucleoli in different pathological conditions 1
   Dr. Komáromy László
20 Changes and alterations in structure and function of nucleoli in different pathological conditions 2
   Dr. Komáromy László
21 Effects of antimetabolites and cytostatic molecules on the nuclear and nucleolar structures 1
   Dr. Komáromy László
22 Effects of antimetabolites and cytostatic molecules on the nuclear and nucleolar structures 2
   Dr. Komáromy László
23 Virus induced alterations in the cell nucleus 1
   Dr. Komáromy László
24 Virus induced alterations in the cell nucleus 2
   Dr. Komáromy László
25 Ultrastructure of apoptotic cells 1
   Dr. Komáromy László
26 Ultrastructure of apoptotic cells 2
   Dr. Komáromy László
27 Final test 1
   Dr. Komáromy László
28 Final test 2
   Dr. Komáromy László

Practices

Seminars

Exam topics/questions
Multiple-choice test.

Participants
OSF-VB2 How to Take the Exam in Molecular Cell Biology? 2

Dr. Gergely Berta, assistant professor
Department of Medical Biology

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

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

Course headcount limitations (min.-max.): 5 – 100

Prerequisites: none

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: 4.

Mid-term exams

Making up for missed classes

No possibility to make up for missed classes.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
  József Szeberényi-László Komáromy: Molecular Cell Biology Syllabus
  M. Pap (editor): Molecular Cell Biology Laboratory Manual
- Recommended literature

Lectures

Practices

Seminars

1 Orientation
2 Exam trial
3 Exam trial
4 Exam trial
5 Exam trial
6 Exam trial
7 Exam trial
8 Exam trial
9 Exam trial
10 Exam trial
11 Exam trial
12 Exam trial
13 Exam trial
14 Exam trial

Exam topics/questions

See at: Molecular Cell Biology 2.

Participants

Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Bátor Judit (BAJFAAO.PTE), Dr. Berta Gergely (BEGFADO.PTE), Dr. Kemény Ágnes (KEAAAA.T.JPTE), Dr. Komáromy László (KOLHAGE.PTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Szeberényi József (SZJGACO.PTE), Dr. Tarjányi Oktávia (TAOGAAO.PTE), Harci Alexandra (HAAGABT.PTE), ifj. Dr. Sétáló György
(SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE), Németh Mária (NEMGAAT.PTE), Schipp Renáta (SCRDAA.T.JPTE), Varga Judit (VAJGACT.PTE)
OSF-VM2 - HOW TO TAKE THE EXAM IN MOLECULAR CELL BIOLOGY AS A DENTISTRY STUDENT? 2

Course director: DR. GERGELY BERTA, assistant professor
Department of Medical Biology

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 25
Prerequisites: OSA-MF1 completed + OSA-MF2 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 for students of dentistry“ in a small-group-discussion setting. The list of exam question of MCB will be followed during the course: each time 4-5 students of the 20-25 member class will be examined with one question for each examinee. The examiner is one of the instructors/professors of the Department who conducts and grades the examination the same way as on „real” exams. All the examiners of the Department will be involved, in a rotation system. The aim of the course is to make students familiar with the stressful atmosphere of oral exams. Only students ready to be exposed to the exam situation week-after-week are invited to take this course.

Conditions for acceptance of the semester
The grade is determined by continuous performance evaluation. Maximum absences: 4.

Mid-term exams
Making up for missed classes
No possibility to make up for missed classes.

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

Lectures
Practices
Seminars
1 Orientation
2 Exam trial
3 Exam trial
4 Exam trial
5 Exam trial
6 Exam trial
7 Exam trial
8 Exam trial
9 Exam trial
10 Exam trial
11 Exam trial
12 Exam trial
13 Exam trial
14 Exam trial

Exam topics/questions
See at: Molecular Cell Biology for students of dentistry 2.

Participants
Dr. Ábrahám Hajnalka Gabriella (ABHMAAO.PTE), Dr. Bátor Judit (BAJFAAO.PTE), Dr. Berta Gergely (BEGFADO.PTE), Dr. Kemény Ágnes (KEAAAA.T.JPTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Szeberényi József (SZJGACO.PTE), Dr. Tarjányi
Oktávia (TAOGAAO.PTE), Harci Alexandra (HAAGABT.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE), Németh Mária (NEMGAAT.PTE), Schipp Renáta (SCRDAAT.JPTE), Varga Judit (VAJGACT.PTE)
OSF-VVE  
VACCINATION, ANTI-VACCINATION MOVEMENTS: DO MORE HARM THAN GOOD

Course director:  
DR. KATALIN SZENDI, assistant professor  
Department of Public Health Medicine

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 12 lectures + 2 practices + 0 seminars = total of 14 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
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

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

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

Legal background. The legal regulation of vaccines. The pros and cons of compulsory vaccination. What is the point of it? The reason for the existence of free choice.
Dr. Szendi Katalin

Practices
1 Anti-vaccination activities in Hungary and abroad.
2 Do we have to deal with the anti-vaccination movements? Anti-vaccination movements, hazards, duties. Psychology of the anti-vaccination attitudes.

Seminars
Exam topics/questions
Neptun
Participants
Dr. Szendi Katalin (SZKFAP.O.PTE)
OSE-AEM

SELL YOURSELF! - PRESENTATION TECHNIQUES IN HEALTHCARE

Course director: DR. JÓZSEF SZENTPÉTERI, honorary professor
Medical Faculty (Medical School)

2 credit • midsemester grade • Elective subject • both semesters semester • recommended semester: 3
Number of hours/semester: 16 lectures + 8 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 100 Prerequisites: none

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

**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 25 % absence allowed

**Mid-term exams**

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**

1. What makes presentation effective? Preparing the audience. Promotional opportunities. The first 30 seconds. The humor, as a rhetorical device. The methodology of exercise. Timeout and compression.
   Dr. Szentpéteri József

   Dr. Szentpéteri József

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3 Basic techniques of the performance (understandable language, understandable volume, awareness-raising dynamism, open communication, free talk)
   Dr. Szentpéteri József
4 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
5 The basic techniques of persuasion. The audience survey, keeping it under control.
   Dr. Szentpéteri József
6 Packaging the content. Questions, handling objections. Tools for arousing attention.
   Dr. Szentpéteri József
7 Nonverbal tools of the presenter I: Appearance. Stage presence. Movement in the available space.
   Dr. Szentpéteri József
8 Nonverbal tools of the presenter II: the face, hands gestures, posture, and their interpretation.
   Dr. Szentpéteri József
9 Proper assessment of the audience reaction based on their non-verbal signals. Proper responses.
   Dr. Szentpéteri József
10 Using visual aids I: How PSE (Picture Superiority Effect) can help to increase the effectiveness of the presentation?
    Dr. Szentpéteri József
11 Using visual aids I.: The design of the slide show, preparation.
    Dr. Szentpéteri József
12 Using visual aids III: Composition guidelines. Acquisition of images, correct and lawful use. Using animations.
    Dr. Szentpéteri József
    Dr. Szentpéteri József
14 Using visual aids V: Guidelines for the duration of each slide. The use of visual material, correct chronology.
    Dr. Szentpéteri József
15 Using visual aids VI: videos, music and pictorial material. Overview of different presentation platforms (PowerPoint, Keynote, Prezi)
    Dr. Szentpéteri József
16 Preparation methods: Text writing, design, technology, the specific room regarding with the expected audience.
    Dr. Szentpéteri József

Practices
1 Tools to raise awareness I
   The first 30 seconds in different genres of performing arts.
2 Tools to raise awareness II
   The use of enhancement in different genres of performing arts
3 Application of effective volume, articulation and facial gestures.
4 Nonverbal gestures supporting effective communication.
5 Recognizing audience’s nonverbal signals.
6 Performance analysis I
   Advertisements
7 Performance Analysis II
   TED lectures
8 Performance Analysis III
   Steve Jobs

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.

Participants

Dr. Szempéteri József (SZJGACT.PTE)
OSE-AKP  
PREPARATION OF ANATOMICAL DEMONSTRATION MATERIAL

Course director:  
DR. PÉTER KISS, associate professor  
Department of Anatomy

1 credit ▪ midterm grade ▪ Elective subject ▪ both semesters semester ▪ recommended semester: 3  
Number of hours/semester:  
0 lectures + 14 practices + 0 seminars = total of 14 hours  
Course headcount limitations (min.-max.):  
1 – 8  
Prerequisites: OSA-B2A completed + OSA-ZT1 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
1  Introduction
2  Preparation
3  Preparation
4  Preparation
5  Preparation
6  Preparation
7  Preparation
8  Preparation
9  Preparation
10 Preparation
11 Preparation
12 Preparation
13 Preparation
14 Evaluation of the preparation

Seminars
Exam topics/questions

Participants
Dr. Kiss Péter (KIPFABO.PTE)
OSE-BEE  BASICS OF EPIDEMIOLOGY

Course director: DR. TIMEA VARJAS, assistant professor
Department of Public Health Medicine

1 credit • midterm grade • Elective subject • autumn semester • recommended semester: 3

Number of hours/semester: 8 lectures + 4 practices + 2 seminars = total of 14 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
During the semester students are acquainted with the basics of epidemiology and epidemiological studies frequently used in scientific literature. With this knowledge one can easily elucidate and interpret scientific publications.
The course is recommended for pharmacists and dentists.

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 Definition, history, goal and concept of epidemiology
   Dr. Szabó István
2 Definition, history, goal and concept of epidemiology
   Dr. Szabó István
3 Epidemiological indicators and their application (incidence, prevalence)
   Dr. Szabó István
4 Epidemiological indicators and their application (RR, OR, statistical significance)
   Dr. Szabó István
5 Epidemiological studies
   Dr. Szabó István
6 Epidemiological studies
   Dr. Szabó István
7 Epidemiology and Evidence Based Medicine
   Dr. Szabó István
8 Epidemiology and Evidence Based Medicine
   Dr. Szabó István

Practices
1 Basic epidemiological calculations
2 Basic epidemiological calculations
3 Analysis of selected scientific publications
4 Analysis of selected scientific publications

Seminars
1 Standardization, Screening
2 Bias, error
Exam topics/questions

Neptun

Participants

Dr. Szabó István (SZIGABO.PTE)
### Biochemistry - Questions and Answers

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

<table>
<thead>
<tr>
<th>OSE-BKF</th>
<th>Biochemistry - Questions and Answers</th>
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<tr>
<td>2 credit • midterm grade • elective subject • autumn semester • recommended semester: 3</td>
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</table>

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

**Course headcount limitations (min.-max.):** 5 – 200
**Prerequisites:** none

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**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: The Building Blocks of Life**
   - Dr. Berente Zoltán
3. **Structure and Function of Proteins**
   - Dr. Jakus Péter
4. **Enzymes**
   - Dr. Jakus Péter
5. **Enzyme Inhibitions I**
   - Dr. Berente Zoltán
6. **Enzyme inhibitions II**
   - Dr. Berente Zoltán
7. **Biodegradation of Carbohydrates**
   - Nagyné Dr. Kiss Gyöngyi
8. **Biosynthesis of Carbohydrates**
   - Nagyné Dr. Kiss Gyöngyi
9. **Regulation of Carbohydrate Metabolism**
   - Dr. Kovács Krisztina
10. **Molecular Background of the Disorders of Carbohydrate Metabolism**
    - Dr. Kovács Krisztina
11. **Biodegradation of Lipids**
    - Dr. Tapodi Antal
12 Biosynthesis of Lipids  
Dr. Tapodi Antal  
13 Regulation of Lipid Metabolism  
Dr. Lengyel Anna  
14 Molecular Background of the Disorders of Lipid Metabolism  
Dr. Lengyel Anna  
15 Amino Acid Metabolism  
Dr. Debreceni Balázs  
16 Nucleotide Metabolism  
Dr. Debreceni Balázs  
17 DNA Replication  
Dr. Tapodi Antal  
18 DNA Repair  
Dr. Tapodi Antal  
19 RNA Synthesis  
Dr. Veres Balázs  
20 Viruses, Retroviruses, Small RNA Molecules  
Dr. Veres Balázs  
21 Protein Synthesis: Participants and Mechanism  
Dr. Berente Zoltán  
22 Regulation of Protein Synthesis  
Dr. Berente Zoltán  
23 Regulation of Gene Expression I  
Dr. Veres Balázs  
24 Regulation of Gene Expression II  
Dr. Veres Balázs  
25 Concerted Hormonal Regulation of Metabolism I  
Dr. Kovács Krisztina  
26 Concerted Hormonal Regulation of Metabolism II  
Dr. Kovács Krisztina  
27 Test  
Dr. Berente Zoltán  
28 Test  
Dr. Berente Zoltán

*Practices*

*Seminars*

*Exam topics/questions*

The semester test questions will be selected from the problems discussed in the classroom.

*Participants*
OSE-DM1

Demonstrator Activity 1

Course director: Dr. László József Czopf, associate professor
1st Department of Internal Medicine

2 credit • midsemester grade • Elective subject • both semesters semester • recommended semester: 3

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

Course headcount limitations (min.-max.): 1 – 300
Prerequisites: none

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 four semesters (in a total value of 8 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 28 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 Demonstrators:
https://docs.google.com/document/d/1xkkveRdZcDphnqWEkpoNOSQJ34MpnBBJqogGb9fod8RW/edit?usp=sharing
Faculty Home Page of the Circle of Demonstrators (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 28 hours demonstrator activity.

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

Recommended literature Lectures Practices
1-28 Demonstrator activity

Seminars
Exam topics/questions
The topics of the tests depend on the specific course of the demonstrator activity.

Participants
Dr. Czopf László József (CZLMAAO.PTE), Dr. Tamás Andrea (TAAFAAO.PTE)
Course director:  
Dr. Gábor Jándó, associate professor  
Institute of Physiology

Electrophysiology  
1 credit • midsemester grade • Elective 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.):  
1 – 200

Prerequisites:  
OSA-B12 completed + OSA-OK2 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  Electrophysics 1  
   Dr. Jándó Gábor
2  Electrophysics 2  
   Dr. Jándó Gábor
3  Excitable membrane 1  
   Dr. Jándó Gábor
4  Excitable membrane 2  
   Dr. Jándó Gábor
5  Membrane potential 1  
   Dr. Jándó Gábor
6  Membrane potential 2  
   Dr. Jándó Gábor
7  Action potential, field potential 1  
   Dr. Jándó Gábor
8  Action potential, field potential 2  
   Dr. Jándó Gábor
9  ECG basics 1  
   Dr. Jándó Gábor
10 ECG basics 2  
   Dr. Jándó 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

Participants
OSE-EHS  
**HUNGER, SATIETY AND DISTURBANCES OF BODY WEIGHT REGULATION**

**Course director:**  
D. László Lénárd I, emeritus professor  
Institute of Physiology

<table>
<thead>
<tr>
<th>1 credit • midterm grade • Elective subject • autumn semester • recommended semester: 3</th>
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<tr>
<td><strong>Number of hours/semester:</strong> 14 lectures + 0 practices + 0 seminars = total of 14 hours</td>
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<td><strong>Course headcount limitations (min.-max.):</strong> 5 – 30</td>
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<td><strong>Prerequisites:</strong> OSA-BI2 completed + OSA-MB2 completed</td>
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</table>

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.  
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.  
Dr. Lénárd László I

10 The role of monoamines in the regulation of feeding. Similarities of food rewarded learning and addictive behavior. The role of dopamine and neuropeptides.  
Dr. Lénárd László I

11 Orexigenic and anorexigenic neuropeptides.  
Dr. Lénárd László I
12 The role of the central angiotensinergic system in drinking and hydromineral balance.  
   Dr. Lénárd László I  
13 Childhood obesity and cognitive processes.  
   Dr. Lénárd László I  
14 Anorexia nervosa, bulimia and binge eating. Clinical relevance of animal experiments  
   Dr. Lénárd László I  

Practices  
Seminars  
Exam topics/questions  
Participants
OSE-EM2

**EMBRYOLOGY FOR STUDENTS OF DENTISTRY 2**

**Course director:** DR. JUDIT HORVÁTH, associate professor
Department of Anatomy

| 1 credit • midterm grade • Elective subject • autumn semester • recommended semester: 3 |
|---|---|
| **Number of hours/semester:** | 12 lectures + 0 practices + 2 seminars = total of 14 hours |
| **Course headcount limitations (min.-max.):** | 1 – 260 |
| **Prerequisites:** | OSE-EM1 completed + OSA-AA2 parallel + OSA-ZT2 parallel |

### Topic

Formation of organs and organ-systems and their further development in the embryonal and fetal period. This is the second part of a two-semester subject. Embryology helps to explain the normal anatomical situ and certain malformations, syndromes. (The lectures will be in the morning, alternating with the series of your histology lectures!)

### Conditions for acceptance of the semester

Presence on at least 85% of course hours is required. Absence (for any reason) is max. teaching hours (= 2x45 min).

### Mid-term exams

Test on the last week of the semester. In case of unsuccessful result there is a possibility to correct it orally in the first week of the exam period.

### Making up for missed classes

For the seminar students may attend the class of another group (strictly on the same week).

### Reading material

- **Obligatory literature**
  
  http://an-server.pote.hu/INFO/eIrod.htm

- **Literature developed by the Department**
  
  http://an-server.pote.hu/

- **Notes**

- **Recommended literature**

### Lectures

1. Development of the respiratory system.
   Dr. Rékási Zoltán
2. Development of the face and the oral and nasal cavity. Malformations
   Dr. Tóth Pál
   Dr. Horváth Judit
4. Early development of the heart; Development of sinus venosus and the atrial septum.
   Dr. Tamás Andrea
5. Development of the ventricles.
   Dr. Tamás Andrea
6. Development of the intestinal system, liver and pancreas.
   Dr. Tamás Andrea
7. Formation of the arterial and venous system Aortic arches and their derivatives.
   Dr. Tamás Andrea
8. Fetal circulation.
   Dr. Tóth Pál
9. Development of reproductive organs I.
   Dr. Horváth Judit
10. Development of reproductive organs II.
    Dr. Horváth Judit
    Dr. Horváth Judit
12. Parallelly developing organ systems. (Recapitulation of embryology)
    Dr. Horváth Judit
Practices

Seminars

1. Embryology seminar
2. Embryology seminar

Exam topics/questions

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

Participants

Dr. Csernus Valér (CSVGAO.PTE), Dr. Farkas Boglárka Anett (FABFADO.PTE), Dr. Gaszner Balázs (GABFADO.PTE), Dr. Horváth Judit (HOJIAAO.PTE), Dr. Horváth-Oppe Gabriella (HOGFAO.PTE), Dr. Kiss Péter (KIPFABO.PTE), Dr. Pethőné Dr. Lubics Andrea (PELMAAO.PTE), Dr. Rékási Zoltán (REZMAAO.PTE), Dr. Tamás Andrea (TAFAAO.PTE), Dr. Tóth Pál (TOPMAAO.PTE)
**OSE-EPS**

**HEALTH PSYCHOLOGY**

Course director: **DR. JANOS KÁLLAI, professor**

Department of Behavioural Sciences

<table>
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<th>2 credit</th>
<th>midsemester grade</th>
<th>Elective subject</th>
<th>both semesters semester</th>
<th>recommended semester: 3</th>
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**Number of hours/semester:**

- 0 lectures + 0 practices + 28 seminars = total of 28 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 burn out 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. Physician role, patient role, competencies in the health psychology paradigm
6. Physician role, patient role, competencies in the health psychology paradigm
7. Stress and health. Primary prevention
8. Stress and health. Primary prevention
9. Coping, problem-focused and emotion-focused coping
10. Coping, problem-focused and emotion-focused coping
11. Ageing, life-span and health
12. Ageing, life-span and health
13. Gender issues, culture and health
14. Gender issues, culture and health
15. Life events, health and illness, crisis, social support
16. Life events, health and illness, crisis, social support
17. Relaxation and other stress-management methods
18. Relaxation and other stress-management methods
19 Adjustment to chronic illness. Patients’ understanding and compliance
20 Adjustment to chronic illness. Patients’ understanding and compliance
21 Quality of life and psychological interventions in chronic illness
22 Quality of life and psychological interventions in chronic illness
23 Hospitalization and stressful medical procedures
24 Hospitalization and stressful medical procedures
25 Health of medical students, professional socialization as a source of stress
26 Health of medical students, professional socialization as a source of stress
27 Health of health care professionals: prevention of burn out.
28 Health of health care professionals: prevention of burn out.

Exam topics/questions

Participants
Dr. Kállai János (KAJFAEP.PTE), Dr. Varga József (VAJGABO.PTE)
**Course director:**

Dr. Gábor Rébék-Nagy, associate professor

**Department of Languages for Specific Purposes**

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

**Number of hours/semester:**

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

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

3 – 25

**Prerequisites:**

OSE-H2A completed + OSE-H3B 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**

- **Obligatory literature**

- Literature developed by the Department

  Mária Győrfy: English for Doctors, Idióma Bt., Pécs, 2001 - Available to buy in the Department.

- **Notes**

- **Recommended literature**

**Lectures**

**Practices**

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

Exam topics/questions

- 

Participants

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Eklicsné Dr. Lepenye Katalin (EKLAXA.B.JPTE), Hild Gabriella (MAGAAD.B.JPTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Móriczné Győrffy Mária (MOGPAAP.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Szántóné Dr. Csongor Alexandra (CSAAA.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
OSE-H3B  MEDICAL HUNGARIAN 3B - MEDICAL COMMUNICATION IN PRACTICE FOR STUDENTS OF DENTISTRY

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

2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 3

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OSE-H3A parallel + OSE-H2B 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

Reading material
- Obligatory literature
  - Literature developed by the Department
    Mária Győrffy: English for Doctors, Idióma Bt., Pécs, 2001 - Available to buy in the Department.
- Notes
- Recommended literature

Lectures

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

Exam topics/questions

- 

Participants

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Eklicsné Dr. Lepenyé Katalin (EKLAXA.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Hild Gabriella (MAGAAD.B.JPTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Móriczné Győrffy Mária (MOGPAAP.PTE), Ronczykné Berta Anikó (BEAAAL.B.JPTE), Szántóné Dr. Csongor Alexandra (CSAAAA.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
The goal of this course is to delineate the structure and variations of the human genome, to foster the formation of an approach that will aid the acquisition of preclinical and later clinical subjects with the possession of a molecular knowledge. The further goal is to discuss the molecular basics associated with human heredity and to introduce diagnostic methods relevant to the understanding of heritable disorders.

Conditions for acceptance of the semester

The grades will be established by a written test at the end of the semester. The written test can be replaced by two successful midterm tests.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  The basis is the topics of the lectures.
  Further readings:
  Tom Strachan and Andrew P. Read: Human Molecular Genetics (4th Edition)

Lectures

1. Introduction: history of genetics, the Human Genome Project, the postgenom era, ENCODE project
   Dr. Melegh Béla
2. Construction of pedigree, basics of mendelian inheritance, characteristics of mendelian and non-mendelian inheritance I
   Dr. Hadzsiev Kinga
3. Construction of pedigree, basics of mendelian inheritance, characteristics of mendelian and non-mendelian inheritance II
   Dr. Hadzsiev Kinga
4. Organization of the human genome I. From the nuclear and mitochondrial genome to organization of the chromosomes
   Dr. Kövesdi Erzsébet
5. Organization of the human genome II: Special elements of the human genome: organization and function of coding and non-coding regions; LINE, SINE, Alu sequence elements, SNP, CNV.
   Dr. Melegh Béla
6. Organization of the human genome III: Basics of cytogenetics, FISH, CGH, array techniques
   Dr. Hadzsiev Kinga
7. Examination methods I. Hybridization methods (blot, PCR and modifications, RFLP, Sanger, NGS, MLPA)
   Dr. Berenténé Dr. Bene Judit Ágnes
8. Examination methods II. Biochemical diagnostics, enzyme diagnostics, determination of metabolites
   Dr. Berenténé Dr. Bene Judit Ágnes
9. Examination methods III: Cytogenetic diagnostics
   Dr. Czakó Mártá
10. Basics of pharmacogenetics, concept of personalised medicine
    Dr. Melegh Béla
11. Mutations, SNPs, haplotypes, genetic drift
    Dr. Kövesdi Erzsébet
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<tr>
<th></th>
<th>Course Description</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Linkage, genetic mapping, Hardy-Weinberg rule, GWAS</td>
<td>Dr. Berenté Dr. Bene Judit Ágnes</td>
</tr>
<tr>
<td>13</td>
<td>Epigenetics, imprinting</td>
<td>Dr. Hadzsiev Kinga</td>
</tr>
<tr>
<td>14</td>
<td>Studying gene function, proteomics, bioinformatics</td>
<td>Dr. Berenté Dr. Bene Judit Ágnes</td>
</tr>
</tbody>
</table>

*Practices*

*Seminars*

*Exam topics/questions*

Neptun Meet Street system.

*Participants*
<table>
<thead>
<tr>
<th>Course</th>
<th>OSE-TD1</th>
<th>STUDENT PROJECT RESEARCH 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course director:</strong></td>
<td><strong>DR. TIBOR ERTL., professor</strong></td>
<td></td>
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<tr>
<td><strong>Course director:</strong></td>
<td><strong>Undergraduate Research</strong></td>
<td></td>
</tr>
<tr>
<td><strong>2 credit • midsemester grade • Elective subject • both semesters semester • recommended semester: 3</strong></td>
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<tr>
<td><strong>Number of hours/semester:</strong></td>
<td><strong>0 lectures + 24 practices + 0 seminars = total of 24 hours</strong></td>
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<tr>
<td><strong>Course headcount limitations (min.-max.):</strong></td>
<td><strong>1 – 300</strong></td>
<td></td>
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<tr>
<td><strong>Prerequisites:</strong></td>
<td><strong>none</strong></td>
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<tr>
<td><strong>The subject can only be registered in case of a PASSED and valid health aptitude test!</strong></td>
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</table>

**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**

1-24 Research

**Seminars**

**Exam topics/questions**

Not applicable

**Participants**

Dr. Balogh Péter (BAPOAGP.PTE)
<table>
<thead>
<tr>
<th>Lecture</th>
<th>Topic</th>
<th>Presenter</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Anatomy and history - history of dissection and anatomy teaching</td>
<td>Dr. Reglődi Dóra</td>
</tr>
<tr>
<td>2</td>
<td>Anatomy and art</td>
<td>Dr. Reglődi Dóra</td>
</tr>
<tr>
<td>3</td>
<td>Bone collections, anatomy museums, body parts of famous people</td>
<td>Dr. Reglődi Dóra</td>
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<tr>
<td>4</td>
<td>Anatomy and anthropology</td>
<td>Dr. Márk László</td>
</tr>
<tr>
<td>5</td>
<td>Anatomy and bodybuilding</td>
<td>Dr. Reglődi Dóra</td>
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<tr>
<td>6</td>
<td>Rembrandt: The Anatomy Lesson of Dr. Nicolaes Tulp - dissection of an anatomy painting</td>
<td>Dr. Reglődi Dóra</td>
</tr>
<tr>
<td>7</td>
<td>Anatomy teaching at a Caribbean university</td>
<td>Dr. Farkas József</td>
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<td>8</td>
<td>Anatomy of body torturing, body modifications and circus shows</td>
<td>Dr. Reglődi Dóra</td>
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<td>9</td>
<td>Anatomy teaching at other medical schools</td>
<td>Dr. Tamás Andrea</td>
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<td>10</td>
<td>Anatomy of body massage</td>
<td>Dr. Fülöp Balázs Dániel</td>
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<td>11</td>
<td>Heavy metal anatomy</td>
<td>Dr. Kiss Péter</td>
</tr>
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</table>
12 Closing lecture
   Dr. Reglődi Dóra

Practices

Seminars

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

Participants
OSF-ASE  PRESENTATION OF CASE REPORTS IN ENGLISH
Course director:  DR. VILMOS WARTA, associate professor  
Department of Languages for Specific Purposes

2 credits • midterm grade • Optional subject • both semesters semester • recommended semester: 3
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 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 participants to compose, understand and give biomedical case report presentations 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
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  
   Dr. Warta Vilmos
2  Introduction  
   Dr. Warta Vilmos
3  Communicative purpose and structure of case reports  
   Dr. Warta Vilmos
4  Communicative purpose and structure of case reports  
   Dr. Warta Vilmos
5  Verbal tenses in case reports  
   Dr. Warta Vilmos
6  Verbal tenses in case reports  
   Dr. Warta Vilmos
7  Impersonalisation  
   Dr. Warta Vilmos
8  Impersonalisation  
   Dr. Warta Vilmos
9  Modality and politeness strategies  
   Dr. Warta Vilmos
10 Modality and politeness strategies  
   Dr. Warta Vilmos
11 Lexis and terminology  
   Dr. Warta Vilmos
12 Lexis and terminology  
   Dr. Warta Vilmos
13 Presentation techniques  
   Dr. Warta Vilmos
|   | Presentation techniques  
<table>
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<tr>
<td>14</td>
<td>Dr. Warta Vilmos</td>
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</tbody>
</table>
| 15 | Presentation of case report 1  
|    | Dr. Warta Vilmos         |
| 16 | Presentation of case report 1  
|    | Dr. Warta Vilmos         |
| 17 | Presentation of case report 2  
|    | Dr. Warta Vilmos         |
| 18 | Presentation of case report 2  
|    | Dr. Warta Vilmos         |
| 19 | Presentation of case report 3  
|    | Dr. Warta Vilmos         |
| 20 | Presentation of case report 3  
|    | Dr. Warta Vilmos         |
| 21 | Presentation of case report 4  
|    | Dr. Warta Vilmos         |
| 22 | Presentation of case report 4  
|    | Dr. Warta Vilmos         |
| 23 | Presentation of case report 5  
|    | Dr. Warta Vilmos         |
| 24 | Presentation of case report 5  
|    | Dr. Warta Vilmos         |
| 25 | Consolidation             
|    | Dr. Warta Vilmos         |
| 26 | Consolidation             
|    | Dr. Warta Vilmos         |
| 27 | Course evaluation         
|    | Dr. Warta Vilmos         |
| 28 | Course evaluation         
|    | Dr. Warta Vilmos         |

Practices

Seminars

Exam topics/questions

Participants
OSF-BUS  

BIOTECHNOLOGY FROM A BUSINESS PERSPECTIVE

Course director:  
DR. JUDIT PONGRÁCZ, professor  
Department of Pharmaceutical Biotechnology

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3

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

Course headcount limitations (min.-max.): 1 – 150  
Prerequisites: none

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

Topic

Interested in biotechnology but have no idea what it is? „Biotechnology from a Business Perspective” is designed to provide an overview of this relatively young industry. This new course introduces the scientific background behind biotechnology with a focus on the business aspects of the sector.

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

Practices

Seminars

1  Introduction to biotechnology: basic terms, definitions, historical overview
2  Introduction to biotechnology: basic terms, definitions, historical overview
3  Red (medical), green (agricultural) and white (industrial-environmental) biotech; examples
4  Red (medical), green (agricultural) and white (industrial-environmental) biotech; examples
5  Medical biotechnology: global and local results
   - Gene therapy and stem cell therapy
   - Cloning and transgenic animals
   - Molecular diagnostics, personalized medicine
   - Tissue engineering
6  Medical biotechnology: global and local results
   - Gene therapy and stem cell therapy
   - Cloning and transgenic animals
   - Molecular diagnostics, personalized medicine
   - Tissue engineering
7  Green biotechnology: potentials and results; Genetically Modified Organisms
8  Green biotechnology: potentials and results; Genetically Modified Organisms
9  Intellectual Property protection, technology transfer
10  Financing of biotech, Venture Capital, Initial Public Offering
11  Business models
12  Spin-off, spin-out companies, other special characteristics of the industry
13  Biotech vs. Big Pharma
14  Case studies
   - Genentech, Amgen (USA)
   - Solvo, Cyclolab (Hungarian)
Exam topics/questions
www.medbiotech.com

Participants
Dr. Járomi Luca (JALGAAT.PTE), Dr. Kvell Krisztián (KVFAAO.PTE), Dr. Pongrácz Judit (POJOAA-P.PTE), Kovácsné Kósa Judit (SOKDAB.FJPTE)
OSF-EBK  FOOD SAFETY AND CRISIS SITUATIONS  
Course director: DR. TAMÁS VARIJAS, assistant professor  
Department of Public Health Medicine  

1 credit • midterm 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.): 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, European and Hungarian food safety regulation I  
Raposa László Bence  
2 Introduction, European and Hungarian food safety regulation II  
Raposa László Bence  
3 Cases and concealed facts I. (Historical overview)  
Raposa László Bence  
4 Cases and concealed facts II. (Historical overview)  
Raposa László Bence  
5 Crisis management and communication I  
Raposa László Bence  
6 Crisis management and communication II  
Raposa László Bence  
7 Cases and concealed facts III  
Raposa László Bence  
8 Cases and concealed facts IV  
Raposa László Bence  
9 Food industry „tricks”: Changes which the layman does not realize I  
Raposa László Bence  
10 Food industry „tricks”: Changes which the layman does not realize II  
Raposa László Bence  
11 Actual food safety crisis I  
Raposa László Bence  
12 Actual food safety crisis II  
Raposa László Bence  
13 Summary  
Raposa László Bence  
14 Exam  
Raposa László Bence
Practices
Seminars
Exam topics/questions
Neptun
Participants
Epidemiological Methods for Undergraduate Research (TDK) and Thesis-writing

Course director: Dr. István Kiss, professor
Department of Public Health Medicine

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 3

Number of hours/semester:

- 24 lectures + 4 practices + 0 seminars = total of 28 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 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 I.
   Dr. Berényi Károly
2. Basics of epidemiology and research methodology II.
   Dr. Berényi Károly
3. Basics of research design
   Dr. Berényi Károly
4. Ethical questions in scientific work, ethics approval
   Dr. Berényi Károly
5. Creation of adequate hypothesis
   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 human studies based on questionnaire
   Dr. Berényi Károly
9. Processing questionnaires
   Dr. Berényi Károly
10. Possibilities and rules of data recording
    Dr. Berényi Károly
11. Analysis and assessment for attitude experiments
    Dr. Berényi Károly
12 Design of molecular epidemiological studies
   Dr. Berényi Károly
13 Analysis of screening methods, ROC curve analysis I.
   Dr. Berényi Károly
14 Analysis of screening methods, ROC curve analysis II.
   Dr. Berényi Károly
15 Statistical programs for epidemiological study assessments (Excel, SPSS, R, Statistica etc.)
   Dr. Berényi Károly
16 Overview of most frequently used statistical methods
   Dr. Berényi Károly
17 Evaluation of association and cause-effect relationship
   Dr. Berényi Károly
18 Applications of survival models
   Dr. Berényi Károly
19 Basics of factor-analysis and interpretation of results I.
   Dr. Berényi Károly
20 Basics of factor-analysis and interpretation of results II.
   Dr. Berényi Károly
21 Multivariate analysis in epidemiology I.
   Dr. Berényi Károly
22 Multivariate analysis in epidemiology II.
   Dr. Berényi Károly
23 Evaluation of multivariate analysis
   Dr. Berényi Károly
24 Presentation of results
   Dr. Berényi Károly

Practices
1 Analysis of epidemiological studies. Computer practical I.
2 Analysis of epidemiological studies. Computer practical II.
3 Analysis of epidemiological studies. Computer practical III.
4 Analysis of epidemiological studies. Computer practical IV.

Seminars

Exam topics/questions

Neptun

Participants

Dr. Berényi Károly (BEKFABO.PTE)
OSF-EFA ETHNOPHARMACOBOTANY

Course director: DR. NÓRA PAPP, associate professor
Department of Pharmacognosy

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
  Lectures can be downloaded from Neptun system.
- 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 Medicinal plants in folk custom and tradition as symbols.
Dr. Papp Nóra
26 Medicinal plants in folk custom and tradition as symbols.
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.
Participants
OSF-ETA

HUMAN NUTRITION AND DIETETICS

Course director: DR. ZSUZSANNA VÉRTES, associate professor
Institute of Physiology

2 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 3
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 3 – 40
Prerequisites: OSA-MB2 completed

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

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
Protein
Dr. Vértes Zsuzsanna

Protein
Dr. Vértes Zsuzsanna

Vitamins
Dr. Vértes Zsuzsanna

Vitamins
Dr. Vértes Zsuzsanna

Minerals
Dr. Vértes Zsuzsanna

Minerals
Dr. Vértes Zsuzsanna

Water and body fluids
Dr. Vértes Zsuzsanna

Alcohol
Dr. Vértes Zsuzsanna

Nutrition during pregnancy and lactation
Dr. Vértes Zsuzsanna

Nutrition for growth and development
Dr. Vértes Zsuzsanna

Nutrition and physical fitness
Dr. Vértes Zsuzsanna

Nutrition and physical fitness
Dr. Vértes Zsuzsanna

Nutrition and weight management
Dr. Vértes Zsuzsanna

Eating disorders
Dr. Vértes Zsuzsanna

Nutrition and diabetes mellitus
Dr. Vértes Zsuzsanna

Nutrition and osteoporosis
Dr. Vértes Zsuzsanna

Overweight and obesity
Dr. Vértes Zsuzsanna

Overweight and obesity
Dr. Vértes Zsuzsanna

Exam
Dr. Vértes Zsuzsanna

Exam
Dr. Vértes Zsuzsanna

Practices
Seminars
Exam topics/questions
Written exam
Participants
OSF-FAN  |  DENTAL ANATOMY
Course director:  |  DR. GYULA MARADA, clinical specialist
                |  Department of Dentistry, Oral and Maxillofacial Surgery

2 credit  •  midsemester grade  •  Optional subject  •  autumn semester  •  recommended semester: 3
Number of hours/semester:  |  14 lectures + 14 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.):  |  2 – 25  
Prerequisites:  |  OSA-AT1 completed + OSA-PV1 completed

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

Topic
Detailed dental anatomy and embryology. Morphology knowledge improvement with wax modelling.

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

Mid-term exams
Fulfil the practical requirements is compulsory

Making up for missed classes
None

Reading material
- Obligatory literature
  - James L. Fuller: Concise Dental Anatomy and Morphology
  - Thoma W. Sadler: Langman’s Medical Embryology
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1  General anatomy of the oral cavity. Planes and directions
   Dr. Orsi Enikő
2  Anatomy of teeth and periodontal tissues
   Dr. Orsi Enikő
3  Tooth numbering systems
   Dr. Orsi Enikő
4  Histology of hard tissues of teeth
   Dr. Orsi Enikő
5  Histology of the pulp
   Dr. Sándor Balázs Attila
6  Histology of tongue and mucous membrane
   Dr. Sándor Balázs Attila
7  Test
   Dr. Marada Gyula
8  Basic gnathology
   Dr. Marada Gyula
9  Development of face, jaws and oral cavity
   Dr. Marada Gyula
10 Descriptive anatomy of the maxilla and mandible
    Dr. Marada Gyula
11 Development of teeth (histology)
    Dr. Sándor Balázs Attila
12 Development of teeth (morphology)
    Dr. Sándor Balázs Attila
13 Comparative dental morphology
    Dr. Sándor Balázs Attila
14 Morphological differences among permanent and deciduous teeth
    Dr. Sándor Balázs Attila
Practices
1  Tooth modelling from wax: incisors
2  Tooth modelling from wax: incisors
3  Tooth modelling from wax: canines
4  Tooth modelling from wax: canines
5  Tooth modelling from wax: premolars I
6  Tooth modelling from wax: premolars I
7  Tooth modelling from wax: premolars II
8  Tooth modelling from wax: premolars II
9  Tooth modelling from wax: molars I
10 Tooth modelling from wax: molars I
11 Tooth modelling from wax: molars II
12 Tooth modelling from wax: molars II
13 Tooth identification practice
14 Tooth identification practice

Seminars

Exam topics/questions
Test and tooth recognition

Participants
Dr. Orsi Enikő (OREFABO.PTE)
OSF-GMS  GENETICALLY MODIFIED ORGANISMS AND OUR HEALTH
Course director: DR. ZOLTÁN GYÖNGYI, research associate professor
Department of Public Health Medicine

1 credit • midterm grade • Optional subject • both semesters semester • recommended semester: 3
Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 30
Prerequisites: OSA-MB1 completed

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

Topic
The application of genetically modified organisms (GMOs) gains more and more ground in food industry. Over the direct health effect, they have an impact on human economy and health modifying natural environment. The topic provokes social debate, in which, in lack of information, delusions also appear.
The goal of the education is that students receive impartial knowledge of the role of GMOs in our life and their beneficial or possible harmful impact on our health.
During the education students receive a knowledge of molecular background of production of GMOs, their role in agriculture, the appeared cases and possible health risks, their occurrence in foodstuffs, medical applications, tests, regulations, authorization, economical and social impacts.

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

Mid-term exams
There is a final test only on the last lecture/practice. In case of absence there can be a personal consultation.

Making up for missed classes
Consultation with good cause.

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture slides on Coospace
- Notes
- Recommended literature

Lectures
1  The appearance of genetically modified organisms (GMOs)
   Dr. Gyöngyi Zoltán
2  Role of GMOs in agriculture
   Dr. Gyöngyi Zoltán
3  Basics of genetically modification I
   Dr. Gyöngyi Zoltán
4  Basics of genetically modification II
   Dr. Gyöngyi Zoltán
5  Possible harmful effect of GMOs to health
   Dr. Gyöngyi Zoltán
6  Background of deaths caused by GM food
   Dr. Gyöngyi Zoltán
7  Prevention of GMO induced health hazard
   Dr. Gyöngyi Zoltán
8  Genetically modification in medicine
   Dr. Gyöngyi Zoltán
9  GMOs in food I.
   Dr. Gyöngyi Zoltán
10  GMOs in food II.
    Dr. Gyöngyi Zoltán
Authorization of GMOs  
Dr. Gyöngyi Zoltán

Regulation of application  
Dr. Gyöngyi Zoltán

Impact of GMOs on nature environment and eco farms  
Dr. Gyöngyi Zoltán

Effect of GM business on economy, social debates and the flow of information  
Dr. Gyöngyi Zoltán

Exam topics/questions
1. Reasons, why GMOs are created
2. The role of GMOs in the agriculture
3. Impact of GMOs on natural environment and organic farms
4. Molecular basics of genetically modifications
5. Application of genetic modification in the medicine
6. The cause of deaths because of GM food
7. Possible harmful effect of GMOs to health
8. Prevention of harmful effect of GMOs
9. Occurrence of GMOs in foodstuffs, food tests
10. Authorization of GMOs, social debate, flow of information
11. Health impacts of glyphosate
12. Health impacts of Bt toxin

Participants
Drug Design

Course director: Dr. Csaba HETÉNYI, associate professor
Department of Pharmacology and Pharmacotherapy

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 – 300
Prerequisites: none

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.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

There are no intermediate tests during the semester.

Making up for missed classes

Replacement is not possible in case of non-attendance of lectures.

Reading material

- Obligatory literature
- Literature developed by the Department
  Tha 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.
- Notes
- Recommended literature
  Patrick GL: An Introduction to Medicinal Chemistry, Oxford University Press

Lectures

1 Selection of the disease. Goals, terminology, trends.
   Dr. Hetényi Csaba
   Dr. Hetényi Csaba
3 Targets 1. Selection, validation.
   Dr. Hetényi Csaba
   Dr. Hetényi Csaba
   Dr. Hetényi Csaba
6 Targets 4. Receptors.
   Dr. Hetényi Csaba
7 Selection of the lead compound 1. Experimental methods of design of drug action.
   Dr. Hetényi Csaba
8 Selection of the lead compound 2. Theoretical methods of design of drug action.
   Dr. Hetényi Csaba
9 ADMET optimization 1. Pharmacokinetics, metabolism. Experimental prediction methods.
   Dr. Hetényi Csaba
10 ADMET optimization 2. Toxicity, side-effects. Theoretical prediction methods.
   Dr. Hetényi Csaba
11 Lead optimizations, transformations.
   Dr. Hetényi Csaba
12 Termination of drug design. Case studies.
   Dr. Hetényi Csabu

Practices

Seminars

Exam topics/questions

Lists of questions will be provided at the end of each lecture specifying the required knowledge. A written test will be applied at the end of the semester including multiple choice questions and short essays. A mark is offered according to the results of the written test. The student can improve the mark in an oral exam.

Participants
OSF-HAK  |  THE CHEMISTRY OF DEATH
Course director: Dr. LÁSZLÓ MÁRK, associate professor
Department of Biochemistry and Medical Chemistry

1 credit  •  midterm 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.): 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
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 Short term postmortem changes.
Dr. Márk László

9 Chemical alterations of the first hours.
Dr. Márk László

10 Chemical alterations of the first hours.
Dr. Márk László

11 Decomposition processes.
Dr. Márk László

12 Decomposition processes.
Dr. Márk László

13 Special chemical modifications, mummification.
Dr. Márk László

14 Pathological and traumatic investigations.
Dr. Márk László

Practices
Seminars
Exam topics/questions
Introduction to toxicology
Enzymatic reactions
The last minutes of life
Postmortem changes in general
Postmortem enzymal changes
Postmortem non-enzymal chemical changes
Postmortem chemical changes (short term)
Postmortem chemical changes (long term)
Special chemical processes, mummification
Pathological observations
Traumatic changes
Forensic and paleoanthropological methods
Dating methods
Participants
OSF-JNF  HISTORY OF EPIDEMICS AND THE GREAT DISCOVERIES

Course director: DR. ISTVÁN KISS, professor
Department of Public Health Medicine

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 12 lectures + 2 practices + 0 seminars = total of 14 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

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 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 epidemiology. Importance of infectious diseases in the past centuries and in our time I
   Dr. Németh Katalin
2  History of epidemiology. Importance of infectious diseases in the past centuries and in our time II
   Dr. Németh Katalin
3  Great epidemics in the history I (Plague, Smallpox, Typhus)
   Dr. Németh Katalin
4  Great epidemics in the history II (Plague, Smallpox, Typhus)
   Dr. Németh Katalin
5  Great epidemics in the history III (Childhood Diseases)
   Dr. Németh Katalin
6  Great epidemics in the history IV (Childhood Diseases)
   Dr. Németh Katalin
7  Great epidemics in the history V (Tropical illnesses, Influenza)
   Dr. Németh Katalin
8  Great epidemics in the history VI (Tropical illnesses, Influenza)
   Dr. Németh Katalin
9  Discovery of pathogens I
   Dr. Németh Katalin
10 Discovery of pathogens II
    Dr. Németh Katalin

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<table>
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<th>Course</th>
<th>Instructor</th>
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<tr>
<td>Discovery of vaccines I</td>
<td>Dr. Németh Katalin</td>
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<tr>
<td>Discovery of vaccines II</td>
<td>Dr. Németh Katalin</td>
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**Practices**

<table>
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<th>Practice</th>
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<tr>
<td>1. Bioterrorism and biological warfare I</td>
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<td>2. Bioterrorism and biological warfare II</td>
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**Exams**

<table>
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<td>Neptun</td>
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**Participants**

Dr. Németh Katalin (NEKFABO.PTE)
OSF-MAK  
MANUAL SKILL DEVELOPMENT TRAINING
Course director:  
DR. Ákos Nagy, associate professor  
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3
Number of hours/semester:  
0 lectures + 14 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.):  
5 – 25  
Prerequisites: OSA-PV1 completed + OSA-PF2 completed

Topic
The aim of the course is to assess and develop dental students’ manual skills.

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
- Notes
  lecture notes
- Recommended literature

Lectures
Practices
1  Still life drawing
2  Drawing of the facial muscles
3  Drawing of portrait pictures
4  Drawing of the tooth pictures
5  Drawing of teeth
6  Wax tooth carving
7  Wax tooth carving
8  Modelling the teeth using different materials
9  Modelling the teeth using different materials
10 Modelling the teeth using different materials
11 Modelling the teeth using different materials
12 Modelling the teeth using different materials
13 Modelling the teeth using different materials
14 Skill assessment

Seminars
Exam topics/questions
None

Participants
Dr. Nagy Ákos (NAARADP.PTE)
### Molecular Gerontology

**Course director:**

**Dr. Krisztián Kvell,** associate professor  
Department of Pharmaceutical Biotechnology

<table>
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<th>OSF-MGE</th>
<th>MOLECULAR GERONTOLOGY</th>
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<tr>
<td>1 credit</td>
<td>midsemester grade • Optional subject • autumn semester • recommended semester: 3</td>
</tr>
<tr>
<td>Number of hours/semester:</td>
<td>14 lectures + 0 practices + 0 seminars = total of 14 hours</td>
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<tr>
<td>Course headcount limitations (min.-max.):</td>
<td>5 – 200</td>
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<tr>
<td>Prerequisites:</td>
<td>OSA-MB1 completed + OSA-ET1 parallel</td>
</tr>
</tbody>
</table>

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](http://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
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 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 optimalization 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. Communication, types and definitions
12. Communication, types and definitions
13. The psychology of pain
14. The psychology of pain
15. Non-pharmacological pain therapy
16. Non-pharmacological pain therapy
17 Dissociation, definitions and adaptive forms
18 Dissociation, definitions and adaptive forms
19 States of consciousness under general anesthesia
20 States of consciousness under general anesthesia
21 Altered consciousness while suffering loss
22 Altered consciousness while suffering loss
23 Rapport building situations in the medical praxis
24 Rapport building situations in the medical praxis
25 Involvement of the healer: empathy and burnout
26 Involvement of the healer: empathy and burnout
27 Summary
28 Summary

Exam topics/questions
-
Participants
()
### OSF-N37 Anatomical Terminology 2

**Course director:**
Gabriella Hábel, language teacher
Department of Languages for Specific Purposes

**2 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3**

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

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<td>Terminology pertaining to the pharynx, maxilla, mandible, oral cavity and teeth (Hábel Gabriella)</td>
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<td>Anatomical terms relating to the tongue and muscles of the tongue (Hábel Gabriella)</td>
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<td>Respiratory tract I. Anatomical terminology of the nose, paranasal sinuses and larynx (Hábel Gabriella)</td>
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<td>Anatomical terminology pertaining to the heart and cardiovascular system (Hábel Gabriella)</td>
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<td>Anatomical terminology pertaining to the female reproductive system (Hábel Gabriella)</td>
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<td>Repetition concerning the terminology of internal organs (Hábel Gabriella)</td>
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<td>Repetition. Anatomical terms pertaining to bones, muscles, joints, ligaments (Hábel Gabriella)</td>
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<td>26</td>
<td>Repetition. Anatomical terms pertaining to bones, muscles, joints, ligaments (Hábel Gabriella)</td>
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<td>28</td>
<td>Test paper (Hábel Gabriella)</td>
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</table>
Exam topics/questions

Participants

Hábel Gabriella (HAGTAAP.PTE)
UP MS Dentistry major – Elective and Optional subjects - Course descriptions – academic year of 2017/2018

**OSF-STH**  **ADVANCED HISTOLOGY**

**Course director:**

DR. ANDREA TAMÁS, associate professor
Department of Anatomy

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:** OSA-SF1 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. Microscopic slides in 3 dimensional aspect
   Dr. Horváth Judit

2. Life or death? Apoptosis.
   Dr. Horváth-Opper Gabriella

3. Histology of oral cavity from clinical aspect
   Dr. Sándor Balázs Attila

4. Histology of lymphoid system.
   Dr. Gaszner Balázs

5. Histology of the heart from clinical aspect
   Dr. Kónyi Attila

6. Respiratory system
   Dr. Tamás Andrea

7. Characteristics of the gastrointestinal tract. Three-dimensional organization of the intestinal villi.
   Dr. Tamás Andrea

8. Structures of the liver.
   Dr. Kériné Dr. Józsa Rita

9. Structures of the urinary system
   Dr. Tamás Andrea

10. The reproductive cycle: maturation of follicles. What determines the selection of the follicle during maturation
    Dr. Horváth-Opper Gabriella

11. In vitro fertilization
    Dr. Török Attila
Consultation
Dr. Tamás Andrea

Practices
Seminars

Exam topics/questions
Written test, questions are based on the materials of the lectures

Participants
OSF-TEK  TECHNOLOGICAL DISASTERS AND THEIR IMPACT ON HEALTH

Course director: DR. TIMÉA VARJAS, assistant professor
Department of Public Health Medicine

| 1 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 3 |
| Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 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**

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. Air pollution - Smog
   Dr. Szabó István

6. Toxicological aspects of mineral oil
   Dr. Szabó István

7. Oil disasters
   Dr. Szabó István

8. Chemical industrial disasters
   Dr. Szabó István

9. Chemical industrial disasters
   Dr. Szabó István

10. Agricultural disasters
    Dr. Szabó István

11. Disasters in Hungary (River Tisza, Nagytétény, Red Sludge)
    Dr. Szabó István

12. Chernobyl nuclear power plant disaster
    Dr. Szabó István

13. Chernobyl nuclear power plant disaster
    Dr. Szabó István

14. Nuclear disasters
    Dr. Szabó István
Practices
Seminars
Exam topics/questions
Neptun
Participants
OSF-TMB  Molecular Biology of Tumors

Course director: DR. EDINA PANDUR, assistant professor
Department of Pharmaceutical Biology

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: OSA-MB1 completed + OSA-MB2 completed

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
- Literature developed by the Department
  Educational materials will be uploaded to Neptune MeetStreet.
- Notes
- 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  Introduction to cancers: classification and characterization of cancers, causes of cancer, properties of cancer cells, principles of therapies, targets of therapies
   Dr. Pandur Edina
3  Tumor genetics: mutations, carcinogenic agents, inheritance, tumor genes, defects in DNA repair and predispositions to cancer, cell protection mechanisms
   Dr. Pandur Edina
4  Tumor genetics: mutations, carcinogenic agents, inheritance, tumor genes, defects in DNA repair and predispositions to cancer, cell protection mechanisms
   Dr. Pandur Edina
5  Tumor epigenetics: mechanisms of epigenetic inheritance, imprinting, DNA methylation, epigenetics of cell differentiation and tissue homeostasis
   Poór Viktor Soma
6  Tumor epigenetics: mechanisms of epigenetic inheritance, imprinting, DNA methylation, epigenetics of cell differentiation and tissue homeostasis
   Poór Viktor Soma
7  Oncogenes and tumor-suppressor genes
   Dr. Pandur Edina
8  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
   Varga Edit

10. The cell cycle, apoptosis and senescence: checkpoints, therapeutic targets and inhibitors, molecular mechanisms of apoptosis, replicative senescence and its disturbances in human cancers
   Varga Edit

11. Signaling pathways in tumors: MAPK, PI3K, TP53 network, NFκB, TGFβ, STAT signaling
    Dr. Pandur Edina

12. Signaling pathways in tumors: MAPK, PI3K, TP53 network, NFκB, TGFβ, 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.
    Varga Edit

    Varga Edit

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

    Varga Edit

    Varga Edit

21. Diagnosis of tumors: molecular diagnosis, molecular detection and classification
    Dr. Pandur Edina

22. Diagnosis of tumors: molecular diagnosis, molecular detection and classification
    Dr. Pandur Edina

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

Practices
Seminars
Exam topics/questions
Simple choice test based on the lectures.
Participants
OSF-TSA

**STATISTICAL ANALYSIS OF THESIS AND STUDENT RESEARCH PROJECTS**

Course director: **DR. KORNÉLIA FARKAS-BORBÁS**, assistant professor

**Institute of Bioanalysis**

1 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 3

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

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
   
   Borbásné Dr. Farkas Kornélia

3. Learn the theory of the selected methods
   
   Borbásné Dr. Farkas Kornélia

4. Learn the theory of the selected methods
   
   Borbásné Dr. Farkas Kornélia

5. Interpret the results
   
   Borbásné Dr. Farkas Kornélia

6. Interpret the results
   
   Borbásné Dr. Farkas Kornélia

7. Conclusions
   
   Borbásné Dr. Farkas Kornélia

**Practices**

1. Set the data and complete the database for statistical processing
   
   Borbásné Dr. Farkas Kornélia

2. Select the right statistical methods
   
   Borbásné Dr. Farkas Kornélia

3. Learn the theory of the selected methods
   
   Borbásné Dr. Farkas Kornélia

4. Learn the theory of the selected methods
   
   Borbásné Dr. Farkas Kornélia

5. Interpret the results
   
   Borbásné Dr. Farkas Kornélia

6. Interpret the results
   
   Borbásné Dr. Farkas Kornélia

7. Conclusions
Seminars

Exam topics/questions

Participants

Borbásné Dr. Farkas Kornélia (FAKAAA.TJPTE)
**OSF-TSS**

**Medical Applications of Mass Spectrometry**

**Course director:**

**Dr. László Márk**, associate professor
Department of Biochemistry and Medical Chemistry

<table>
<thead>
<tr>
<th>2 credit</th>
<th>midterm grade</th>
<th>Optional subject</th>
<th>autumn semester</th>
<th>recommended semester: 3</th>
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</table>

**Number of hours/semester:**

24 lectures + 0 practices + 0 seminars = total of 24 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**

In medical sciences, emphasis is increasingly placed on instrumental techniques and accurate, quantitative measurements. This course is to give an overall review about the modern mass spectrometry and it shows the medical applications of the MS in the clinical and diagnostic practice.

**Topics:**


**Conditions for acceptance of the semester**

Written exam. Max. absences: 20%.

**Mid-term exams**

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
   Dr. Márk László

2. Basics of mass spectrometry
   Dr. Márk László

3. Basics of mass spectrometry
   Dr. Márk László

4. Ionization techniques
   Dr. Márk László

5. Analizators
   Dr. Márk László

6. Detectors, The mass spectrum
   Dr. Márk László

7. Biomedical sampling
   Dr. Márk László

8. Separation techniques, sample preparation
   Dr. Márk László

9. Separation techniques, sample preparation
   Dr. Márk László

10. Proteomics
    Dr. Márk László

11. Proteomics
    Dr. Márk László
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<tr>
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<th>Course Description</th>
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<td>Dr. Márk László</td>
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<tr>
<td>13</td>
<td>Metabolomics</td>
<td>Dr. Márk László</td>
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<tr>
<td>14</td>
<td>Mass spectrometry of endocrine system</td>
<td>Dr. Márk László</td>
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<td>15</td>
<td>Mass spectrometry of endocrine system</td>
<td>Dr. Márk László</td>
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<td>16</td>
<td>Biomarker discovery</td>
<td>Dr. Márk László</td>
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<tr>
<td>17</td>
<td>Biomarker discovery</td>
<td>Dr. Márk László</td>
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<tr>
<td>18</td>
<td>Lipidomics</td>
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<td>19</td>
<td>Lipidomics</td>
<td>Dr. Márk László</td>
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<td>20</td>
<td>Proteomics of viruses and bacteria</td>
<td>Dr. Márk László</td>
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<tr>
<td>21</td>
<td>Proteomics of viruses and bacteria</td>
<td>Dr. Márk László</td>
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<td>Molecular imaging by MS</td>
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<td>23</td>
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<td>Dr. Márk László</td>
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<tr>
<td>24</td>
<td>Exam</td>
<td>Dr. Márk László</td>
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**Practices**

**Seminars**

**Exam topics/questions**

- Ionsources.
- Analizators.
- Detectors.
- Separation techniques.
- Sample handling. Biomedical sampling.
- Bioinformatics.
- Proteomics.
- Metabolomics
- Lipidomics.
- Biomarker discovery.
- Mass spectrometric imaging techniques.
- MS of endocrine system.

**Participants**
OSE-2DA  TWO-DIMENSIONAL ANATOMY - MODERN MEDICAL IMAGING TECHNIQUES
Course director:  DR. BALÁZS GASZNER, associate professor
Department of Anatomy

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 4
Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 60  Prerequisites: OSA-AA2 completed

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 body cavities
   Dr. Battyáni István
5  Internal organs and the skeleton as shown by radioactive isotope imaging
   Dr. Bódisné Dr. Zámbo Katalin
6  Topography of pelvic organs in horizontal, frontal and sagittal planes
   Dr. Gaszner Balázs
7  Imaging techniques in the urological practice
   Dr. Pytel Ákos 
8  Use of imaging techniques in obstetrics and gynecology.
   Dr. Farkas Bálint
9  Anatomy of the brain in CT and MRI images
   Dr. Gaszner Balázs
10 Angiography of the neck and head
   Dr. Gaszner Balázs
The anatomy of pain as seen by magnetic resonance imaging (fMRI)
Dr. Komoly Sámuel

In vivo neuroanatomical "dissection" of the human brain with the aid of MRI: functional morphology
Dr. Schwarz Attila

Imaging of the central nervous system using techniques of nuclear medicine
Dr. Bódisné Dr. Zámbó Katalin

Modern imaging techniques in neurosurgery
Dr. Fehér Máté

Practices
Seminars
Exam topics/questions
No exam questions available.
Participants
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  Three planes of biomedical presentations
   Dr. Rébék-Nagy Gábor
2  Three planes of biomedical presentations
   Dr. Rébék-Nagy Gábor
3  Textual orientation in BMPs
   Dr. Rébék-Nagy Gábor
4  Textual orientation in BMPs
   Dr. Rébék-Nagy Gábor
5  Interpersonal communication in BMPs
   Dr. Rébék-Nagy Gábor
6  Interpersonal communication in BMPs
   Dr. Rébék-Nagy Gábor
7  Factual communication patterns in BMPs
   Dr. Rébék-Nagy Gábor
8  Factual communication patterns in BMPs
   Dr. Rébék-Nagy Gábor
9  The macrostructure of BMPs and the microstructure of individual sections
   Dr. Rébék-Nagy Gábor
10 The macrostructure of BMPs and the microstructure of individual sections
    Dr. Rébék-Nagy Gábor
11 Discourse markers in BMPs
    Dr. Rébék-Nagy Gábor
12 Discourse markers in BMPs
    Dr. Rébék-Nagy Gábor
Politeness strategies in BMPs
Dr. Rébék-Nagy Gábor

Evaluation criteria of BMPs
Dr. Rébék-Nagy Gábor

Physical features of BMPs
Dr. Rébék-Nagy Gábor

Criteria of good practice of BMPs
Dr. Rébék-Nagy Gábor

Materials collection for BMPs
Dr. Rébék-Nagy Gábor

Power point presentation tips
Dr. Rébék-Nagy Gábor

Presentation by students
Dr. Rébék-Nagy Gábor

Course evaluation
Dr. Rébék-Nagy Gábor

Practices

Seminars

Exam topics/questions

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

Participants

Dr. Rébék-Nagy Gábor (REGCAC.BJPTE)
# OSE-ANB  
**MEDICAL ENGLISH 2/b - TAKING MEDICAL CASE HISTORIES IN ENGLISH**  
*Course director: Dr. Vilmos WARTA, associate professor*  
*Department of Languages for Specific Purposes*  

<table>
<thead>
<tr>
<th>2 credit • midterm grade • Elective subject • both semesters • recommended semester: 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 28 lectures + 0 practices + 0 seminars = total of 28 hours</td>
</tr>
</tbody>
</table>
| **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!

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**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. Györfy: English for Doctors (Authentic Consulting Room Activities for Doctors, Dentists, Students and Nurses), Idióma Bt., Pécs, 2001  
- Recommended literature

**Lectures**  
1. Introduction  
   Dr. Warta Vilmos  
2. Introduction  
   Dr. Warta Vilmos  
3. Politeness strategies  
   Dr. Warta Vilmos  
4. Politeness strategies  
   Dr. Warta Vilmos  
5. Internal medicine (1)  
   Dr. Warta Vilmos  
6. Internal medicine (1)  
   Dr. Warta Vilmos  
7. Internal medicine (2)  
   Dr. Warta Vilmos  
8. Internal medicine (2)  
   Dr. Warta Vilmos  
9. Obstetrics and gynaecology  
   Dr. Warta Vilmos  
10. Obstetrics and gynaecology  
    Dr. Warta Vilmos  
11. Surgery  
    Dr. Warta Vilmos  
12. Surgery  
    Dr. Warta Vilmos
<table>
<thead>
<tr>
<th>No.</th>
<th>Course Title</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>13</td>
<td>Urology</td>
<td>Dr. Warta Vilmos</td>
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<td>Urology</td>
<td>Dr. Warta Vilmos</td>
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<td>15</td>
<td>Paediatrics</td>
<td>Dr. Warta Vilmos</td>
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<td>16</td>
<td>Paediatrics</td>
<td>Dr. Warta Vilmos</td>
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<tr>
<td>17</td>
<td>Face Threatening Activities (1)</td>
<td>Dr. Warta Vilmos</td>
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<td>18</td>
<td>Face Threatening Activities (1)</td>
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<td>19</td>
<td>Face Threatening Activities (2)</td>
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<td>20</td>
<td>Face Threatening Activities (2)</td>
<td>Dr. Warta Vilmos</td>
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<td>21</td>
<td>General Practitioners</td>
<td>Dr. Warta Vilmos</td>
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<td>22</td>
<td>General Practitioners</td>
<td>Dr. Warta Vilmos</td>
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<tr>
<td>23</td>
<td>Written test</td>
<td>Dr. Warta Vilmos</td>
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<td>24</td>
<td>Written test</td>
<td>Dr. Warta Vilmos</td>
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<td>25</td>
<td>Consolidation</td>
<td>Dr. Warta Vilmos</td>
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<tr>
<td>26</td>
<td>Consolidation</td>
<td>Dr. Warta Vilmos</td>
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<tr>
<td>27</td>
<td>Course evaluation</td>
<td>Dr. Warta Vilmos</td>
</tr>
<tr>
<td>28</td>
<td>Course evaluation</td>
<td>Dr. Warta Vilmos</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Participants**
Bioinorganic Chemistry

Course director: Dr. Attila Agócs, associate professor
Department of Biochemistry and Medical Chemistry

2 credit • midterm grade • Elective 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 – 40  Prerequisites: OSA-OM1 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 to bioinorganic chemistry I 
   Dr. Agócs Attila
2  Introduction to bioinorganic chemistry II 
   Dr. Agócs Attila
3  Structure of biocomplex compounds 
   Dr. Takátsy Anikó
4  Chelates 
   Dr. Takátsy Anikó
5  Life essential elements 
   Dr. Agócs Attila
6  Evolution of inorganic chemicals 
   Dr. Agócs Attila
7  Evolution of organic chemicals 
   Dr. Agócs Attila
8  Uptake of metallic elements 
   Dr. Takátsy Anikó
9  Uptake of anions, molecules 
   Dr. Takátsy Anikó
10 Biological importance of alkali metals 
   Dr. Berente Zoltán
11 Biological importance of alkaline earth metals 
   Dr. Berente Zoltán
12 Bioinorganic chemistry of Fe-ions 
   Dr. Berente Zoltán
Bioinorganic chemistry of Cu-ions
Dr. Berente Zoltán

Bioinorganic chemistry of Zn-ion
Dr. Berente Zoltán

Bioinorganic chemistry of transition metals I
Dr. Berente Zoltán

Bioinorganic chemistry of transition metals II
Dr. Berente Zoltán

Bioinorganic chemistry of transition metals III
Dr. Berente Zoltán

Test Paper I.
Dr. Agócs Attila

Biological role of aluminium
Dr. Agócs Attila

Biological role of silicon
Dr. Agócs Attila

Function of nitrogen in biological systems
Dr. Agócs Attila

Function of phosphorus in biological systems
Dr. Agócs Attila

Dioxygen, oxygen free radicals I
Dr. Agócs Attila

Dioxygen, oxygen free radicals II
Dr. Agócs Attila

Boron, Selenium
Dr. Agócs Attila

Arsenic and other non-metallic elements
Dr. Agócs Attila

Biological functions of halogenes
Dr. Agócs Attila

Test Paper II
Dr. Agócs Attila

Practices
Seminars
Exam topics/questions

Lecture slides will be uploaded to the homepage of the institute.

Participants
### OSE-DM2  
**Demonstrator Activity 2**

**Course director:**  
DR. LÁSZLÓ JÓZSEF CZOPF, associate professor  
1st Department of Internal Medicine

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Elective subject • both semesters semester • recommended semester: 4</th>
</tr>
</thead>
</table>

*Number of hours/semester:*

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

*Course headcount limitations (min.-max.):*  
1 – 300

**Prerequisites:**  
OSE-DM1 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 four semesters (in a total value of 8 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 28 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 Demonstrators:  
https://docs.google.com/document/d/1xkkveRdZcDphnqWEkpoNOSOF34MpBBJqogGb9f0d8RW/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrators (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 28 hours demonstrator activity.

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes

**Recommended literature Lectures Practices**

1-28 Demonstrator activity

**Seminars**

**Exam topics/questions**

The topics of the tests depend on the specific course of the demonstrator activity.

**Participants**

Dr. Czopf László József (CZLMAAO.PTE), Dr. Tamás Andrea (TAAFAAO.PTE)
OSE-EAH  
**PHYSIOLOGY OF THE ADAPTATION LIMITS OF THE HUMAN BODY**

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

<table>
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<tr>
<th>2 credit</th>
<th>midsemester grade</th>
<th>Elective subject</th>
<th>spring semester</th>
<th>recommended semester: 4</th>
</tr>
</thead>
</table>

**Number of hours/semester:** 28 lectures + 0 practices + 0 seminars = total of 28 hours  
**Course headcount limitations (min.-max.):** 5 – 220  
**Prerequisites:** OSA-ET1 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, kinetosis, weightlessness, then vision, hearing, intellectual work, attention, concentration, learning/memory, exhaustion, sleep withdrawal, psychological tensions and behavioral activity, usage of tools to overcome these limits.

**Conditions for acceptance of the semester**

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 II, Physiological problems during hiking, adaptation limits and their origins.  
   Dr. Környei József László

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

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

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

8. Forms of underwater activity I, Physiology of the adaptation limits  
   Dr. Környei József László
9 Deep sea diving II, Physiology of the adaptation limits
   Dr. Környei József László
10 Deep sea diving II, Physiology of the adaptation limits
   Dr. Környei József László
11 Consultation
   Dr. Környei József László
12 1st in-semester report test.
   Dr. Környei József László
13 Thermal strain situations I: Total body and local cold effects
   Dr. Környei József László
14 Thermal strain situations I: Total body and local cold effects
   Dr. Környei József László
15 Thermal strain situations II: Total body and local warm effects
   Dr. Környei József László
16 Thermal strain situations II: Total body and local warm effects
   Dr. Környei József László
17 Mechanical resistance of the human body: passive limits (accidental traumas)
   Dr. Környei József László
18 Sport and military strain situations, physiological limits of muscular work.
   Dr. Környei József László
19 Reaction time, coordination of movements, physiology of active limits.
   Dr. Környei József László
20 Causes of accidents, the human factor.
   Dr. Környei József László
21 Electric current and radioactivity limits.
   Dr. Környei József László
22 Weather fronts, physiology of orientation
   Dr. Környei József László
23 Physiological limits of sensory organs in humans, vision and hearing.
   Dr. Környei József László
24 Fear and overcoming it, adrenalin need, effects of sleep withdrawal, upper limits of concentration.
   Dr. Környei József László
25 Physiology of time shift problems, jet-lag.
   Dr. Környei József László
26 Intellectual work, memory, will-power and survival skills.
   Dr. Környei József László
27 Consultation
   Dr. Környei József László
28 2nd in-semester report test, defining progress grades
   Dr. Környei József László

Practices
Seminars
Exam topics/questions
Test questions based on the topics of the lectures.
Participants
OSE-H4A - Medical Hungarian 4A - Basics of Communication for Students of Dentistry

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

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

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

Course headcount limitations (min.-max.): 3 – 25

Prerequisites: OSE-H3A completed + OSE-H4B parallel

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

Topic
To facilitate oral communication between dentist and patient.

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

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

Lectures

Practices
1 Doctor-patient communication on dental problems
2 Doctor-patient communication on dental problems
3 Doctor-patient communication on dental problems
4 Doctor-patient communication on dental problems
5 Doctor-patient communication on dental problems
6 Doctor-patient communication on dental problems
7 Doctor-patient communication on dental problems
8 Doctor-patient communication on dental problems
9 Doctor-patient communication on dental problems
10 Doctor-patient communication on dental problems
11 Doctor-patient communication on dental problems
12 Doctor-patient communication on dental problems
13 Doctor-patient communication on dental problems
14 Doctor-patient communication on dental problems
15 Consolidation
16 Test 1
17 Test 1
18 Preparation for the Final Exam in Medical Hungarian
19 Preparation for the Final Exam in Medical Hungarian
20 Preparation for the Final Exam in Medical Hungarian
21 Preparation for the Final Exam in Medical Hungarian
22 Preparation for the Final Exam in Medical Hungarian
23 Preparation for the Final Exam in Medical Hungarian
24 Preparation for the Final Exam in Medical Hungarian
25 Preparation for the Final Exam in Medical Hungarian
26 Preparation for the Final Exam in Medical Hungarian
27 Test 2
28 Course evaluation
Seminars

Exam topics/questions

Participants

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Eklicsné Dr. Lepenye Katalin (EKLAXA.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Hild Gabriella (MAGAAD.B.JPTE), Horváth Lilla Anita (HOLFABP.PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Szántóné Dr. Csongor Alexandra (CSAAAA.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
**OSE-H4B**  
**MEDICAL HUNGARIAN 4B - LANGUAGE POINTS AND SKILLS DEVELOPMENT FOR STUDENTS OF DENTISTRY**

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

**2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4**

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

**Course headcount limitations (min.-max.):**  
2 – 25  
**Prerequisites:** OSE-H3B completed + OSE-H4A parallel

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

**Topic**

To develop communication skills between dentist and patient

**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**

**Reading material**

- **Obligatory literature**

- Literature developed by the Department  
  In-house materials

- **Notes**

- **Recommended literature**

**Lectures**

**Practices**

1. Listening Comprehension Skills Development
2. Speaking Skills Development
3. Listening Comprehension Skills Development
4. Speaking Skills Development
5. Listening Comprehension Skills Development
6. Speaking Skills Development
7. Listening Comprehension Skills Development
8. Speaking Skills Development
9. Listening Comprehension Skills Development
10. Speaking Skills Development
11. Listening Comprehension Skills Development
12. Speaking Skills Development
13. Test 1
14. Test 1
15. Preparation for the Final Exam in Medical Hungarian
16. Preparation for the Final Exam in Medical Hungarian
17. Preparation for the Final Exam in Medical Hungarian
18. Preparation for the Final Exam in Medical Hungarian
19. Preparation for the Final Exam in Medical Hungarian
20. Preparation for the Final Exam in Medical Hungarian
21. Preparation for the Final Exam in Medical Hungarian
22. Preparation for the Final Exam in Medical Hungarian
23. Preparation for the Final Exam in Medical Hungarian
24. Preparation for the Final Exam in Medical Hungarian
25. Preparation for the Final Exam in Medical Hungarian
26. Preparation for the Final Exam in Medical Hungarian
27. Preparation for the Final Exam in Medical Hungarian
28. Test 2, Course Evaluation
**Seminars**

**Exam topics/questions**

- 

**Participants**

Dr. Hegedűs Anița (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Hild Gabriella (MAGAAD.B.JPTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAL.B.JPTE), Szántóné Dr. Csongor Alexandra (CSAAAA.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
OSE-MAF  RELATIONSHIP BETWEEN INTRAUTERINE DEVELOPMENT AND ANATOMICAL SITUS

Course director:  DR. JUDIT HORVÁTH, associate professor
Department of Anatomy

1 credit • midsemester 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:  OSA-AA2 completed + OSA-ET1 completed + OSA-SF2 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](http://an-server.pote.hu/OKT/K_Emb/eK_Emb.htm)
- Notes
- Recommended literature

**Lectures**
1 Intruterine 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 Intruterine development in the first two months and the external body shape.
2 Intruterine 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](http://an-server.pote.hu/OKT/K_Emb/eK_Emb.htm)

**Participants**
Dr. Horváth Judit (HOJIAAO.PTE)
OSE-MPS

MEDIZINISCHE PSYCHOLOGIE UND SOZIOLOGIE

Course director: Dr. TIRINGER, ISTVÁN, Außerordentliche/r Professor/in
Department of Behavioural Sciences

4 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4
Number of hours/semester: 28 lectures + 0 practices + 28 seminars = total of 56 hours
Course headcount limitations (min.-max.): 5 – 200  Prerequisites: OSA-MB2 completed

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

Topic

Conditions for acceptance of the semester
1. Prüfung: Multiple Choice Test. Wiederholte Prüfung: mündlich
Fehlzeiten: max. 15% des Gesamtstundenzahles
Mid-term exams
Test nach ca. der Hälfte des Semesters.
Der Anteilname ist nicht obligatorisch, aber empfehlenswert als eine Möglichkeit der Rückmeldung und als Übung bei der Lösung von MC-Fragen.
Making up for missed classes
Registrierte Teilnahme im Seminar einer anderen Gruppe (nur ausnahmsweise).
Reading material
- Obligatory literature
  - Empfohlene Lehrbücher:
- Literature developed by the Department
  Neptun Meet Street
- Notes
- Recommended literature
Lectures
1  1. Emotion. Motivation Dr. Tiringer István
2  1. Emotion. Motivation Dr. Tiringer István
3  2. Lernen, Gedächtnis, kognitive Faktoren des (Gesundheits-)Verhaltens. Dr. Tiringer István
4  2. Lernen, Gedächtnis, kognitive Faktoren des (Gesundheits-)Verhaltens. Dr. Tiringer István
5  3. Theorien der Persönlichkeit. Bezüge zur Krankheit und Gesundheit. Verhaltensgenetik  
   Dr. Tiringer István
   Dr. Tiringer István
7  4. Die wichtigsten Modelle zur Entwicklung der Persönlichkeit (Freud, Erikson, Piaget, Bindungsforschung).  
   Dr. Birkás Béla
   Dr. Tiringer István
9  5. Einführung in die medizinische Soziologie  
   Faubl Nóra Klára
10 5. Einführung in die medizinische Soziologie  
   Faubl Nóra Klára
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
19 10. Plazebo, Nozebo  
   Dr. Tiringer István
20 10. Plazebo, Nozebo  
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
23 12. Ostermontag  
   Dr. Tiringer István
24 12. Ostermontag  
   Dr. Tiringer István
   Dr. Tiringer István
   Dr. Tiringer István
27 14. Psychokardiologie  
   Dr. Tiringer István
28 14. Psychokardiologie  
   Dr. Tiringer István

Practices
Seminars

1. Methodische Grundlagen: Beispiele aus konkreten Untersuchungen.
3. Psychologische Messinstrumente in der medizinischen Psychologie.
4. Psychologische Messinstrumente in der medizinischen Psychologie.
5. Psychologische Teste: Intelligenzteste. Persönlichkeitstests, projektiwe Verfahren
6. Psychologische Teste: Intelligenzteste. Persönlichkeitstests, projektiwe Verfahren
13. Ärztliche Sozialisation. Ärztliche Ausbildung.
14. Ärztliche Sozialisation. Ärztliche Ausbildung.
17. Ärztliche Gesprächsituationen.
18. Ärztliche Gesprächsituationen.
19. Ärztliche Gesprächsführung (Kommunikationstraining).
20. Ärztliche Gesprächsführung (Kommunikationstraining).
21. Ärztliche Gesprächsführung (Kommunikationstraining).
22. Ärztliche Gesprächsführung (Kommunikationstraining).
25. Psychosoziale Interventionsprogramme in der Medizin.
27. Psychoonkologie
28. Psychoonkologie

Exam topics/questions

Vorlesung-, und Seminar-Folien: Neptun Meet Street

Participants

(), Dr. Birkás Béla (BIBGAAB.PTE), Dr. Tíringer István (TIIHAAE.PTE), Faubl Nóra Klára (FANAAA.B.JPTE)
# Sexology

**Course director:** Dr. Géza Hartmann, professor emeritus

**Institute of Physiology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Midterm grade</th>
<th>Elective subject</th>
<th>Semesters</th>
<th>Recommended semester: 4</th>
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<tbody>
<tr>
<td>OSE-SEX</td>
<td>2</td>
<td></td>
<td>Selected subject</td>
<td>Both semesters</td>
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</table>

**Number of hours/semester:**

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

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

**Prerequisites:** OSA-ET1 completed + OSA-MB2 completed

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

## Topic

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

## Conditions for acceptance of the semester

- Maximum of 25% absence allowed

## Mid-term exams

- None

## Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  - Kaplan, H. S.: The Sexual Desire Disorders
  - Kaplan, H. S.: The New Sex Therapy
  - Hite, S.: Hite Report: Shere Hite - A Nationwide Study of Female Sexuality

## Lectures

1. History of sexual investigations  
   Dr. Hartmann Géza
2. History of human sexuality  
   Dr. Hartmann Géza
3. Sexual problems in puberty  
   Dr. Bálint Írisz Boglárka
4. Sexual problems in puberty  
   Dr. Bálint Írisz Boglárka
5. Contraception  
   Dr. Garai János
6. Contraception  
   Dr. Garai János
7. Stages of sexual reaction  
   Dr. Hartmann Géza
8. Desire disorders and their treatment  
   Dr. Hartmann Géza
9. Stage of excitement  
   Dr. Hartmann Géza
10. Stage of excitement  
    Dr. Hartmann Géza
11. Masturbation  
    Dr. Hartmann Géza
    Dr. Hartmann Géza
<table>
<thead>
<tr>
<th>No.</th>
<th>Topic</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Mechanisms of erection</td>
<td>Dr. Hartmann Géza</td>
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<tr>
<td>14</td>
<td>Erectile dysfunction and treatment</td>
<td>Dr. Hartmann Géza</td>
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<td>15</td>
<td>Surgical treatment of erectile dysfunction</td>
<td>Dr. Hartmann Géza</td>
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<td>16</td>
<td>Surgical treatment of erectile dysfunction</td>
<td>Dr. Hartmann Géza</td>
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<tr>
<td>17</td>
<td>Premature ejaculation, Retarded ejaculation</td>
<td>Dr. Hartmann Géza</td>
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<td>18</td>
<td>Orgasm</td>
<td>Dr. Hartmann Géza</td>
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<td>19</td>
<td>Orgastic dysfunction</td>
<td>Dr. Hartmann Géza</td>
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<td>20</td>
<td>Treatment of orgastic dysfunctions</td>
<td>Dr. Hartmann Géza</td>
</tr>
<tr>
<td>21</td>
<td>Vaginismus</td>
<td>Dr. Hartmann Géza</td>
</tr>
<tr>
<td>22</td>
<td>Sexual problems in older ages</td>
<td>Dr. Hartmann Géza</td>
</tr>
<tr>
<td>23</td>
<td>Sexual deviations</td>
<td>Dr. Tényi Tamás</td>
</tr>
<tr>
<td>24</td>
<td>Sexual deviations</td>
<td>Dr. Tényi Tamás</td>
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<tr>
<td>25</td>
<td>Forensic medicine and sexology</td>
<td>Dr. Simon Gábor</td>
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<tr>
<td>26</td>
<td>Forensic medicine and sexology</td>
<td>Dr. Simon Gábor</td>
</tr>
<tr>
<td>27</td>
<td>Pornography and prostitution</td>
<td>Dr. Hartmann Géza</td>
</tr>
<tr>
<td>28</td>
<td>Test</td>
<td>Dr. Hartmann Géza</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Test exam**

**Participants**
OSE-SZO  |  BEHAVIOURAL SCIENCE 3 (MEDICAL SOCIOLOGY)

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

2 credit  •  midsemester grade  •  Elective 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.):  |  1 – 150  |  Prerequisites:  |  none

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

**Topic**

Medical sociology deals with the sociological and behavioural factors influencing the health status and health care. Acquiring the theoretical and practical basis of sociology at this course, students will be able to realize and understand the basic patterns of behaviour in maintenance of health, in the development of illness, and in the process of treatment and care in the context of the society. Main research issues of sociology: epidemiology of chronic diseases; health and illness behaviour; sociological-economic aspects of health care; models of development in health care; alternative medicine.

**Conditions for acceptance of the semester**

According to Code of Studies and Examinations.

**Mid-term exams**

- 

**Making up for missed classes**

- 

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**

- **Notes**

- **Recommended literature**

**Lectures**

1  |  Introduction. Sociological approaches to health and medicine  
   |  Dr. Füzesi Zsuzsanna
2  |  Introduction. Sociological approaches to health and medicine  
   |  Dr. Füzesi Zsuzsanna
3  |  Measuring health and illness. Social causes of illness.  
   |  Dr. Varga József
4  |  Measuring health and illness. Social causes of illness.  
   |  Dr. Varga József
5  |  Models of health and illness.  
   |  Dr. Varga József
6  |  Models of health and illness.  
   |  Dr. Varga József
7  |  Labelling behaviour, illness as a deviance.  
   |  Dr. Füzesi Zsuzsanna
8  |  Labelling behaviour, illness as a deviance.  
   |  Dr. Füzesi Zsuzsanna
9  |  Illness behaviour  
   |  Dr. Varga József
10 |  Illness behaviour  
    |  Dr. Varga József
11 |  Coping with illness  
    |  Dr. Varga József
12 |  Coping with illness  
    |  Dr. Varga József
<table>
<thead>
<tr>
<th></th>
<th>Course Title</th>
<th>Instructor</th>
</tr>
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<tbody>
<tr>
<td>13</td>
<td>Models of doctor-patient relationship.</td>
<td>Dr. Varga József</td>
</tr>
<tr>
<td>14</td>
<td>Models of doctor-patient relationship.</td>
<td>Dr. Varga József</td>
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<td>15</td>
<td>Doctor-patient communication.</td>
<td>Dr. Füzesi Zsuzsanna</td>
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<tr>
<td>16</td>
<td>Doctor-patient communication.</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
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<td>17</td>
<td>Professional socialization of medical students. The hidden curriculum.</td>
<td>Dr. Varga József</td>
</tr>
<tr>
<td>18</td>
<td>Professional socialization of medical students. The hidden curriculum.</td>
<td>Dr. Varga József</td>
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<tr>
<td>19</td>
<td>Clinical autonomy</td>
<td>Dr. Varga József</td>
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<tr>
<td>20</td>
<td>Clinical autonomy</td>
<td>Dr. Varga József</td>
</tr>
<tr>
<td>21</td>
<td>Inequalities in health, types of health care</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
<tr>
<td>22</td>
<td>Inequalities in health, types of health care</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
<tr>
<td>23</td>
<td>Delivering and evaluating health care</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
<tr>
<td>24</td>
<td>Delivering and evaluating health care</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
<tr>
<td>25</td>
<td>Social basis of disease, social role of medicine.</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
<tr>
<td>26</td>
<td>Social basis of disease, social role of medicine.</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
<tr>
<td>27</td>
<td>Summary, overview.</td>
<td>Dr. Füzesi Zsuzsanna</td>
</tr>
<tr>
<td>28</td>
<td>Summary, overview.</td>
<td>Dr. Füzesi Zsuzsanna</td>
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</table>

**Practices**  

**Seminars**  

**Exam topics/questions**  

Semester exam:  
Written multiple choice test, 50-60 questions. Bettering the exam grade: oral exam.  
Study materials for the exam:  
Questions of oral exam: titles and subtitles of the lectures and the reference book.  
Further details about the exam can be found on Neptun.  

**Participants**
OSE-TD2  STUDENT PROJECT RESEARCH 2

Course director: DR. TIBOR ERTL, professor
Undergraduate Research

2 credit • midsemester grade • Elective subject • both semesters semester • recommended semester: 4

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

Course headcount limitations (min.-max.): 1 – 300
Prerequisites: OSF-TD1 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
1-24 Research

Seminars

Exam topics/questions
Not applicable

Participants
Dr. Balogh Péter (BAPOAGP.PTE)
Course director: Dr. Zoltán Karádi, professor
Institute of Physiology

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4
Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 2 – 25
Prerequisites: OSA-MB2 completed + OSA-OK2 completed + OSA-AA2 completed

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
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.
   Dr. Karádi Zoltán
2 Homeostasis, motivation.
   Dr. Karádi Zoltán
3 Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. I
   Dr. Karádi Zoltán
4 Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. II
   Dr. Karádi Zoltán
5 Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. III
   Dr. Karádi Zoltán
6 Exogenous chemosensory modalities. Physiologic roles of gustation.
   Dr. Karádi Zoltán
7 Central taste pathways, „labeled lines”, neurons.
   Dr. Karádi Zoltán
8 Taste preference, taste aversion, palatability, flavour.
   Dr. Karádi Zoltán
9 The glucose-monitoring (GM) neural network. I
   Dr. Karádi Zoltán
10 The glucose-monitoring (GM) neural network. II
   Dr. Karádi Zoltán
The glucose-monitoring (GM) neural network. III  
Dr. Karádi Zoltán

Eating and metabolic disorders: obesity, anorexia nervosa, diabetes mellitus, metabolic syndrome. I 
Dr. Karádi Zoltán

Eating and metabolic disorders: obesity, anorexia nervosa, diabetes mellitus, metabolic syndrome. II 
Dr. Karádi Zoltán

Feeding and metabolic disorders: disturbance of the GM system? 
Dr. Karádi Zoltán

Practices

Seminars

Exam topics/questions
According to topics of the lectures

Participants
OSF-ANC 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

2 credit • midterm grade • Optional subject • both semesters semester • recommended semester: 4

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 3 – 200 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 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
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 format of MRAs
   Dr. Rébék-Nagy Gábor
2 The format of MRAs
   Dr. Rébék-Nagy Gábor
3 The logical cycle of inductive inquiry
   Dr. Rébék-Nagy Gábor
4 The logical cycle of inductive inquiry
   Dr. Rébék-Nagy Gábor
5 The genre of MRA
   Dr. Rébék-Nagy Gábor
6 The genre of MRA
   Dr. Rébék-Nagy Gábor
7 The discourse community
   Dr. Rébék-Nagy Gábor
8 The discourse community
   Dr. Rébék-Nagy Gábor
9 Non-native writers’ paradox
   Dr. Rébék-Nagy Gábor
10 Non-native writers’ paradox
   Dr. Rébék-Nagy Gábor
Psycholinguistic aspects of the MRA  
Dr. Rébék-Nagy Gábor

Socio-cultural aspects of the MRA  
Dr. Rébék-Nagy Gábor

The lexis and grammar of MRAs  
Dr. Rébék-Nagy Gábor

The introduction section  
Dr. Rébék-Nagy Gábor

The methods section  
Dr. Rébék-Nagy Gábor

The discussion section  
Dr. Rébék-Nagy Gábor

The abstract  
Dr. Rébék-Nagy Gábor

Politeness phenomena in MRAs  
Dr. Rébék-Nagy Gábor

Modality in MRAs  
Dr. Rébék-Nagy Gábor

Course evaluation  
Dr. Rébék-Nagy Gábor


Practices
Seminars
Exam topics/questions
Participants
OSF-BDK  MOLECULAR BIOLOGICAL METHODS IN CANCER RESEARCH

Course director: DR. ZSUZSA RÁKOSY, assistant professor
Department of Public Health Medicine

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 4
Number of hours/semester: 12 lectures + 2 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 30
Prerequisites: OSA-MB2 completed

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

Topic
Cancers is one of the major cause of death worldwide, in addition the incidence of this disease has been increasing. Research is needed to identify the unknown risk factors and to understand the molecular basis of carcinogenesis to provide new tools and insights into aetiology and prevention of this malignancy.
The course is going to familiarize the students with the modern molecular biological methods and their role in the cancer research field including the most recent clinical and preventive aspects. The lectures will present novel approaches in the characterization of the molecular alterations and will provide global perspective and knowledge on high throughput and targeted molecular biological techniques in the cancer research.

Conditions for acceptance of the semester
Participation in lectures and practicals is obligatory which is registered.
Absences should not exceed 15% of practicals (2x45 min). Otherwise signature of grade book is denied.

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

Reading material
- Obligatory literature
- Literature developed by the Department
  ppt presentation (CooSpace)
- Notes
- Recommended literature

Lectures
1  In situ hybridization techniques I
   Dr. Rákosy Zsuzsa
2  In situ hybridization techniques II
   Dr. Rákosy Zsuzsa
3  Microarray techniques I.: Detection of genetic and epigenetic alterations I
   Dr. Rákosy Zsuzsa
4  Microarray techniques I.: Detection of genetic and epigenetic alterations II
   Dr. Rákosy Zsuzsa
5  Microarray techniques II. : Identification of RNA and protein expression changes I
   Dr. Rákosy Zsuzsa
6  Microarray techniques II. : Identification of RNA and protein expression changes II
   Dr. Rákosy Zsuzsa
7  High throughput sequencing, role of new generation sequencing systems in the cancer research I
   Dr. Rákosy Zsuzsa
8  High throughput sequencing, role of new generation sequencing systems in the cancer research II
   Dr. Rákosy Zsuzsa
9  In vitro gene manipulations I
   Dr. Rákosy Zsuzsa
10 In vitro gene manipulations II
    Dr. Rákosy Zsuzsa
11 Animal models and 3 dimensions model systems I  
   Dr. Rákosy Zsuzsa  
12 Animal models and 3 dimensions model systems II  
   Dr. Rákosy Zsuzsa  

Practices  
1 The thousands face of PCR I  
2 The thousands face of PCR II  

Seminars  

Exam topics/questions  
-  

Participants  
Dr. Rákosy Zsuzsa (RAZVAAP.PTE)
OSF-BFM | PROBLEM SOLVING IN BIOMETRICS
Course director: DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

1 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 4
Number of hours/semester: 0 lectures + 14 practices + 0 seminars = total of 14 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
Active participation on the classes. Maximum one missed class

Mid-term exams
Making up for missed classes
One extra class

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
     or
     and
  Yates, Dan, Moore, David S., Starnes, Daren S.: The Practice of Statistics (TI-83/89 Graphing Calculator Enhanced) 2/e, W.H. Freeman, 2003 or

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

Seminars
Exam topics/questions
No exam but active participation on the classes is a must.
Participants
Dr. Pótó László (POLGABO.PTE)
OSF-BIN  BIOINFORMATICS

Course director: DR. LÁSZLÓ GRAMA, associate professor
Department of Biophysics

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4
Number of hours/semester: 0 lectures + 14 practices + 14 seminars = total of 28 hours
Course headcount limitations (min.-max.): 5 – 18  Prerequisites: OSA-MB1 completed

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

Topic
According to a simple definition bioinformatics is molecular biology on a computer. Today, also due to the Human Genome Project, an incredible amount of information is available on our genes and proteins. What can we use this information for? The aim of bioinformatics is to organize this information and to help us find and analyze the relevant data. Our course provides an introduction to these. We will seek answers to questions like:
- how can we find the DNA and amino acid sequence of a given protein on the internet?
- how can we distinguish coding and non-coding regions of a gene?
- how can we predict the properties of DNA and protein molecules based on their sequence?
- how can we design a protein cloning experiment?
- how similar is the same protein found in men and mice?
- how can the 3D structure of a protein be predicted?
- how can we visualize and manipulate the 3D structure of a protein?

During the course we will not only discuss the theoretical background of the above (and many other) questions, but students will also be able to try out all these methods in practice.

Conditions for acceptance of the semester
Maximum of three absences.

Mid-term exams
Making up for missed classes
None.

Reading material
- Obligatory literature
- Literature developed by the Department
  http://biofizika.aok.pte.hu
- Notes

Recommended literature Lectures Practices
1  Introduction
2  Molecular biology basics
3  Introduction to basic tools
4  Protein databases
5  Nucleotide databases
6  Gene and genome databases. Restriction mapping
7  PCR primer design. Plasmid maps
8  Designing a cloning project 1
9  Designing a cloning project 2
10 Similarity searches (BLAST)
11 Multiple sequence alignments. Phylogenetic trees
12 3D protein structures
13 Protein structure prediction, computer simulations
14 Bibliography databases (PubMed), working with references

Seminars
1  Introduction
2  Molecular biology basics
3  Introduction to basic tools
4  Protein databases
Nucleotide databases
Gene and genome databases. Restriction mapping
PCR primer design. Plasmid maps
Designing a cloning project 1
Designing a cloning project 2
Similarity searches (BLAST)
Multiple sequence alignments. Phylogenetic trees
3D protein structures
Protein structure prediction, computer simulations
Bibliography databases (PubMed), working with references

Exam topics/questions
http://biofizika.aok.pte.hu

Participants
Dr. Grama László (GRLHAO.PTE), Dr. Kengyel András Miklós (KEAFACO.PTE), Dr. Talián Csaba Gábor (TACRAAO.PTE)
OSF-BOT  THEORY AND PRACTICE OF EVIDENCE-BASED MEDICINE

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

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4

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

Evidence-based medicine (EBM) offers practical tools to solve the practical problems arising in clinical settings as well as in outpatient care. This course is aimed not only to summarise the basic knowledge of EBM, but to provide practical examples of the usefulness of EBM as well. Formulating of clinical questions, literature search strategies as well as critical appraisal of papers revealed by the search is discussed in detail.

Conditions for acceptance of the semester

Missing more than 4 hours of teaching excludes the student from the course.

Mid-term exams

Making up for missed classes

Missing not more than four hours may be amended by studying at home and answering specific questions of the tutor.

Reading material

- Obligatory literature
- Literature developed by the Department
  The teaching material will be made electronically available for the students.
- Notes
- Recommended literature

Lectures

1 Formulating clinical questions (PICO strategy)  Dr. Decsi Tamás
2 Searching electronic databases  Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
3 Randomised controlled trials  Dr. Decsi Tamás
4 Appraisal of randomised controlled trials  Dr. Decsi Tamás
5 Systematic reviews  Dr. Decsi Tamás
6 Appraisal of systematic reviews  Dr. Decsi Tamás
7 Clinical guidelines  Dr. Decsi Tamás
8 Appraisal of clinical guidelines  Dr. Decsi Tamás
9 Epidemiological studies  Dr. Decsi Tamás
10 Appraisal of epidemiological studies  Dr. Decsi Tamás
11 Health technology assessment  Dr. Decsi Tamás
12 Cost-benefit analysis  Dr. Decsi Tamás
13 Practical implication of the evidence  Dr. Decsi Tamás
14 Implementation of changes in health care  Dr. Decsi Tamás
Practices

Seminars

Exam topics/questions

The individual performance of students will be follow-up during the course; the last hour of the course will be devoted to evaluating the readiness of the student to apply methods of EBM in practical settings.

Participants

Dr. Decsi Tamás (DETIAAK.PTE)
OSF-CSU  
MIRACLES OF LIVING MATERIALS ("REALISTIC" BIOCHEMISTRY)

Course director:  
DR. BALÁZS VERES, associate professor  
Department of Biochemistry and Medical Chemistry

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4
Number of hours/semester:  
14 lectures + 0 practices + 0 seminars = total of 14 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
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
  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
8 Cancer, AIDS: beyond therapy  
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
13 Ideas behind Nobel prizes I  
   Dr. Veres Balázs
14 Ideas behind Nobel prizes II  
   Dr. Veres Balázs

Practices

Seminars

Exam topics/questions
Exam topics are the topics of the lectures during the course.

Participants
Dr. Veres Balázs (VEBAAB.TJPTE)
**OSF-EKK**

**HEALTH AND PHYSICAL ENVIRONMENT**

Course director: **DR. TIMEA VARJAS**, assistant professor  
Department of Public Health Medicine

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4

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

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**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**

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
  - PPT-presentations (Neptun)
- Notes
- Recommended literature

**Lectures**

1. Introduction, Human and physical environment  
   Dr. Szabó István
2. Urbanization; The effect of modern civilization on health  
   Dr. Szabó István
3. Human factors and Ergonomics  
   Dr. Szabó István
4. Human factors and Ergonomics  
   Dr. Szabó István
5. Ergonomics and anthropometry  
   Dr. Szabó István
6. Built environment; The environmental context of disability  
   Dr. Szabó István
7. Vision and lighting (illumination, display screen equipment)  
   Dr. Szabó István
8. Vision and lighting (illumination, display screen equipment)  
   Dr. Szabó István
9. Selected electromagnetic radiations and health - Electronic smog  
   Dr. Szabó István
10. Selected electromagnetic radiations and health - Electronic smog  
    Dr. Szabó István
11. Indoor climate and air quality  
    Dr. Szabó István
12. Indoor climate and air quality  
    Dr. Szabó István
13 Biometeorology  
   Dr. Szabó István

14 Hearing and noise, physical and psychological aspects  
   Dr. Szabó István

Practices

Seminars

Exam topics/questions

Neptun

Participants
OSF-EMM  MOLECULAR BASIS OF ENDOCRINE DISEASES

Course director: DR. MARIETTA VÉRTES M, professor emeritus
Institute of Physiology

2 credit • midsemester 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 – 50  Prerequisites: OSA-MB2 completed

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

Topic
Endocrinology is the study of hormones, their receptors and the intracellular signalling pathways they invoke. The aim of the program is to understand the effects of hormones on cellular growth and function and their implications in development of endocrine dysfunction. Explain the molecular and cellular abnormalities in common endocrine-based diseases.

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

Mid-term exams
Written exam, multiple choice questions from lectures

Making up for missed classes
Oral discussion of given chapter

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  - Williams Textbook of Endocrinology, 2004
  - Goodman M: Basic Medical Endocrinology, 2000
  - Greenspan FS, Baxter JD: Basic and Clinical Endocrinology, 2003

Lectures
1  Disorders of endocrine system. Hypo- and hyperfunction
   Dr. Vértes M Marietta
2  Disorders of endocrine system. Hypo- and hyperfunction
   Dr. Vértes M Marietta
3  Defect in sensitivity to hormones. Approach to the patient with endocrine disease
   Dr. Vértes M Marietta
4  Defect in sensitivity to hormones. Approach to the patient with endocrine disease
   Dr. Vértes M Marietta
5  Laboratory and imaging studies. Endocrinologic evaluation of the hypothalamo-pituitary axis
   Dr. Vértes M Marietta
6  Laboratory and imaging studies. Endocrinologic evaluation of the hypothalamo-pituitary axis
   Dr. Vértes M Marietta
7  Pituitary disorders: adenomas, Hypopituitarism, hypothalamic dysfunction.
   Dr. Vértes M Marietta
8  Pituitary disorders: adenomas, Hypopituitarism, hypothalamic dysfunction.
   Dr. Vértes M Marietta
9  Hormonal disorders of growth.
   Dr. Vértes M Marietta
10 Hormonal disorders of growth.
    Dr. Vértes M Marietta
11 Disorders of the thyroid
    Dr. Vértes M Marietta
12 Disorders of the thyroid
    Dr. Vértes M Marietta
Goiter, Hypothyroidism.
Dr. Vértes M Marietta

Goiter, Hypothyroidism.
Dr. Vértes M Marietta

Hyperthyroidism, Autoimmune disorders
Dr. Vértes M Marietta

Hyperthyroidism, Autoimmune disorders
Dr. Vértes M Marietta

Hormonal dysfunction of carbohydrate, protein and fat metabolism
Dr. Vértes M Marietta

Hormonal dysfunction of carbohydrate, protein and fat metabolism
Dr. Vértes M Marietta

Disorders of pancreas
Dr. Vértes M Marietta

Disorders of pancreas
Dr. Vértes M Marietta

Glucocorticoids, Adrenal medulla
Dr. Vértes M Marietta

Glucocorticoids, Adrenal medulla
Dr. Vértes M Marietta

Neural and hormonal integration in control of fluid homeostasis
Dr. Vértes M Marietta

Neural and hormonal integration in control of fluid homeostasis
Dr. Vértes M Marietta

Antidiuretic hormones, Mineral corticoids, Atrial Natriuretic Hormones
Dr. Vértes M Marietta

Antidiuretic hormones, Mineral corticoids, Atrial Natriuretic Hormones
Dr. Vértes M Marietta

Exam
Dr. Vértes M Marietta

Exam
Dr. Vértes M Marietta

Practices

Seminars

Exam topics/questions

Participants
POISONOUS AND VENOMOUS ANIMALS, ANIMAL POISONINGS

Course director: DR. GELLÉRT GERENCSÉR, assistant professor
Department of Public Health Medicine

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4
Number of hours/semester: 24 lectures + 4 practices + 0 seminars = total of 28 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
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
- Literature developed by the Department
  In Neptun.
- Notes
- 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
11 Arachnid poisoning I. (spiders), case reports (Black widow, Loxosceles sp.)
Bérczi Bálint Dániel
12 Arachnid poisoning II. (scorpions, ticks and mites), case reports (American scorpions, ticks)
Bérczi Bálint Dániel
13 Fish and Amphibians poisoning I. (active), case reports (rays, scorpion-, fire-, stonefish)
Bérczi Bálint Dániel
14 Fish and Amphibians poisoning II. (passive), case reports (tetrodotoxin, ciguatera-, scombrototoxin)
Bérczi Bálint Dániel
15 Amphibian poisonings, case reports (toads, newt related poisonings)
Bérczi Bálint Dániel
16 Reptiles and lizards poisoning, case reports (lizard related envenomations)
Bérczi Bálint Dániel
17 Snakebite poisoning I.
Bérczi Bálint Dániel
18 Snakebite poisoning II.
Bérczi Bálint Dániel
19 Snakebite poisonings III., case reports
Bérczi Bálint Dániel
20 The mechanism of snake related venoms
Bérczi Bálint Dániel
21 Poisoning caused by Birds, case reports (pitohui and quail envenomations)
Bérczi Bálint Dániel
22 Poisoning caused by Mammals, case reports (shrews and platypus related envenomations)
Bérczi Bálint Dániel
23 The general medical care of animal poisonings
Dr. Berényi Károly
24 Medical care and treatment of snakebite poisonings
Dr. Berényi Károly

Practices

1 Presenting various venom apparatus (nematocytes, venom dentitions, venom-thorns)
2 Presenting some related animal species throughout the laboratory practice
3 Presenting the equipments related to the medical care I.
4 Presenting the equipments related to the medical care II.

Seminars

Exam topics/questions

In Neptun

Participants

Bérczi Bálint Dániel (BEBIABT.PTE)
OSF-OBQ  MEDICAL BIOCHEMISTRY - QUESTIONS AND ANSWERS

Course director: Dr. Zoltán Berente, associate professor
Department of Biochemistry and Medical Chemistry

2 credit • midsemester 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 – 200
Prerequisites: OSA-BKA 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 and a sample test must be written in the last week.

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: What makes "Medical biochemistry" medical?
   Dr. Berente Zoltán

2  Introduction 2: Though "Medical Biochemistry" is "medical", it is still "biochemistry"
   Dr. Berente Zoltán

3  Molecular background of disorders 1: Genome level alterations and their detection
   Dr. Veres Balázs

4  Molecular background of disorders 2: Transcriptome level alterations and their detection
   Dr. Veres Balázs

5  Molecular background of disorders 3: Proteome level alterations and their detection
   Dr. Jakus Péter

6  Molecular background of disorders 4: Metabolome level alterations and their detection
   Dr. Jakus Péter

7  Signal transduction 1
   Dr. Veres Balázs

8  Signal transduction 2
   Dr. Veres Balázs

9  The birth and death of cells
   Dr. Debreceni Balázs

10 Tumour biochemistry
    Dr. Debreceni Balázs
Biochemistry of nutrition 1
Dr. Berente Zoltán

Biochemistry of nutrition 2
Dr. Berente Zoltán

Carbohydrate metabolism: structure-activity relationships
Dr. Agócs Attila

Carbohydrate metabolism: enzymatic and hormonal regulation
Dr. Agócs Attila

Carbohydrate metabolism: organ and organelle specific issues
Dr. Lengyel Anna

Carbohydrate metabolism: pathobiochemical issues
Dr. Lengyel Anna

Lipid metabolism: structure-activity relationships
Dr. Tapodi Antal

Lipid metabolism: enzymatic and hormonal regulation
Dr. Tapodi Antal

Lipid metabolism: organ and organelle specific issues
Dr. Bognár Zita

Lipid metabolism: pathobiochemical issues
Dr. Bognár Zita

Protein and nucleotide metabolism: structure-activity relationships
Dr. Jakus Péter

Protein and nucleotide metabolism: enzymatic and hormonal regulation
Dr. Jakus Péter

Protein and nucleotide metabolism: organ and organelle specific issues
Dr. Berente Zoltán

Protein and nucleotide metabolism: pathobiochemical issues
Dr. Berente Zoltán

Biochemical background of acquired metabolic diseases 1
Dr. Kovács Krisztiina

Biochemical background of acquired metabolic diseases 2
Dr. Kovács Krisztiina

Test
Dr. Berente Zoltán

Test
Dr. Berente Zoltán

Practices

Seminars

Exam topics/questions

The semester test questions will be selected from the problems discussed in the classroom.

Participants
### Bone Pathology

**Course director:** Dr. László Márk, associate professor  
Department of Biochemistry and Medical Chemistry

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 26 lectures + 0 practices + 0 seminars = total of 26 hours</td>
</tr>
<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 3 – 50</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> none</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 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**

Making up for missed classes

Not possible.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Lecture slides and notes.
- **Notes**
- **Recommended literature**
  - Palfi et al: Tuberculosis Past and Present, 1999

**Lectures**

1. **Introduction**  
   Dr. Márk László
2. **The paleopathology, an interdisciplinary science**  
   Dr. Márk László
3. **The paleopathology, an interdisciplinary science**  
   Dr. Márk László
Chemical composition and biochemistry of the bone tissue
Dr. Márk László

Chemical composition and biochemistry of the bone tissue
Dr. Márk László

Sex determination techniques
Dr. Márk László

Lifetime determination
Dr. Márk László

Congenital alterations. Trauma
Dr. Márk László

Trepanations
Dr. Márk László

Tuberculosis
Dr. Márk László

Tuberculosis
Dr. Márk László

Lepra
Dr. Márk László

Lepra
Dr. Márk László

Syphilis
Dr. Márk László

Syphilis
Dr. Márk László

The Pest
Dr. Márk László

The Pest
Dr. Márk László

Osteo-necrotic alterations, dystrophies
Dr. Márk László

Osteocarcinoma, bone tumors
Dr. Márk László

Joint diseases
Dr. Márk László

Joint diseases
Dr. Márk László

Oral paleopathology
Dr. Márk László

Determination of molecular biomarkers
Dr. Márk László

Paleoproteomics. Evolution of the human pathogens
Dr. Márk László

Exam
Dr. Márk László

Exam
Dr. Márk László

Practices
Seminars
Exam topics/questions
Chemical composition of human bone tissue.
Sex determination techniques.
Life determination.
Congenital alterations.
Traumatic morphology.
Trepanations.
Mycobacterial infections.
Tuberculosis.
Lepra.
Syphilis.
The Pest.
Bone tumors, osteocarcinoma.
Joint diseases.
Oral paleopathology.
Molecular biomarker discovery.
Evolution of human pathogenes.
Evolution of Mycobacterium.

Participants
OSF-TKE  THE ETHICS OF SCIENTIFIC RESEARCH

Course director: TIBOR SZOLCSÁNYI, assistant professor
Department of Behavioural Sciences

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4
Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 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 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  Rationality and ethics
6  Rationality and ethics
7  The methodology of scientific research in natural sciences, and its ethical implications
8  The methodology of scientific research in natural sciences, and its ethical implications
9  The methodology of scientific research in natural sciences, and its ethical implications
10 The methodology of scientific research in natural sciences, and its ethical implications
11 The ethical concerns of clinical trials
12 The ethical concerns of clinical trials
13 The ethical concerns of clinical trials
14 The ethical concerns of clinical trials
15 Ethical problems raised by animal experimentation
16 Ethical problems raised by animal experimentation
17 The placebo effect
18 The placebo effect
19 Ethics and scientific achievement
20 Ethics and scientific achievement
21 Gene-ethics
22 Gene-ethics II.
23 The ethics of stem cell research
24 The ethics of stem cell research II.
25 Neuroethical examples of the social impact of medical research
26 Summarizing discussion
27 Test
28 Test

Exam topics/questions

Participants

Dr. Szolcsányi Tibor (SZTAAJ.B.JPTE)


**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 Biominalisation: 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.
Participants
Dr. Nagy Tamás II (NATFABO.PTE), Dr. Pandur Edina (PAEFAA.T.JPTE), Poór Viktor Soma (POVFAB.T.JPTE), Varga Edit (VAEQABT.PTE)
ATT5  PHYSICAL EDUCATION 5

Course director: TAMÁS TÉCZELY, physical education teacher
UP MS Sports Facilities

0 credit • signature • Optional subject • both semesters semester • recommended semester: 5
Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 2 – 50
Prerequisites: ATT4 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 Modul document

Seminars
Exam topics/questions
Participants
Farkas György (FAGMAAO.PTE), Lipcsik Zoltán (LIZIAAT.PTE), Németh Attila Miklós (NEAGAET.PTE), Téczely Tamás (PETLAAT.PTE)
### OSE-DM3 \n**Demonstrator Activity 3**

**Course director:** Dr. László József CZOPF, associate professor  
1st Department of Internal Medicine

<table>
<thead>
<tr>
<th>Course director</th>
<th>Associate Professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. László József CZOPF</td>
<td>1st Department of Internal Medicine</td>
</tr>
</tbody>
</table>

- **2 credit • midsemester grade • Elective subject • both semesters semester • recommended semester: 5**
- **Number of hours/semester:** 0 lectures + 28 practices + 0 seminars = total of 28 hours
- **Course headcount limitations (min.-max.):** 1 – 300
  - **Prerequisites:** OSE-DM2 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 four semesters (in a total value of 8 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 28 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 Demonstrators: [https://docs.google.com/document/d/1xkkveldrzcDphmcWEkp0NOSQF34MpBBJqogG09f0d8Rw/edit?usp=sharing](https://docs.google.com/document/d/1xkkveldrzcDphmcWEkp0NOSQF34MpBBJqogG09f0d8Rw/edit?usp=sharing)

Faculty Home Page of the Circle of Demonstrators (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 28 hours demonstrator activity.

### Reading material

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

**Recommended literature Lectures Practices**

1-28 Demonstrator activity

### Seminars

**Exam topics/questions**

The topics of the tests depend on the specific course of the demonstrator activity.

### Participants

Dr. Czopf László József (CZLMAAO.PTE), Dr. Tamás Andrea (TAAFAAO.PTE)
Course director: DR. BEATA BENKE, clinical specialist
Department of Dentistry, Oral and Maxillofacial Surgery

2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 5
Number of hours/semester: 0 lectures + 56 practices + 0 seminars = total of 56 hours
Course headcount limitations (min.-max.): 1 – 25
Prerequisites: OSP-FPP parallel

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

**Topic**

The aim of this course is to inform students about clinical and technological aspects of fixed and removable partial dentures. During the practices the students has to successfully fulfil the requirements of the technical procedures.

**Conditions for acceptance of the semester**

Practical requirements are handled on the first week of the semester.

Requirements for students

- Active participation on practices, based on the Study and Exam Regulations of the University,
- Attendance of practices is mandatory.
- Completion of the tasks in the laboratory

Practice:

- Average of the marks receiving for the practical tasks in the training laboratory. The average must be at least 2.0. If the student gets 3 or more failed marks during the semester for his/her practical work, then the semester can not be evaluated and accepted.
- Average of the marks of written or oral tests relating the theoretical knowledge which is necessary to carry out the practical work. The average must be at least 2.

Form of tests: oral test, written test, etc. - The mark of these may be max. 3 times failed(1), after collecting three failed marks the student has to improve it through a written test, the topic is given by the tutor. The student gets one opportunity to write the test. If the student gets further failed mark, the semester/practice is not accepted, it can not be evaluated.

- If either of the above averages (for the practical work or the relating theory) does not reach 2.0 the end semester practical mark can not be evaluated and accepted, the student has to repeat the course.

Consequences of coming late to the practice

Students must come to the practice on time. If a student is late three times, it is equal with one missing. If a

**Mid-term exams**

According to Code of Studies and Examinations

**Making up for missed classes**

None

**Reading material**

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

  McCracken: Removable Partial Prosthodontics

**Lectures**

**Practices**

1. Practising the handling of burs.
2. Practising the handling of burs.
3. Practising the handling of burs.
4. Practising the handling of burs.
5. Preparation of a lower molar tooth for full metal crown.
6. Preparation of a lower molar tooth for full metal crown.
7. Preparation of a lower molar tooth for full metal crown.
8. Preparation of a lower molar tooth for full metal crown.
Preparation of a lower premolar and molar tooth for a metal-ceramic crown.
Preparation of a lower premolar and molar tooth for a metal-ceramic crown.
Preparation of a lower premolar and molar tooth for a metal-ceramic crown.
Preparation of a lower premolar and molar tooth for a metal-ceramic crown.
Preparation of a lower premolar and molar tooth for a metal-ceramic crown.
Preparation of an upper incisor for a full ceramic crown.
Preparation of an upper incisor for a full ceramic crown.
Preparation of an upper incisor for a full ceramic crown.
Preparation of an upper incisor for a full ceramic crown.
Preparation of an upper canine and premolar tooth for a full ceramic and metal-ceramic crown.
Preparation of an upper canine and premolar tooth for a full ceramic and metal-ceramic crown.
Preparation of an upper canine and premolar tooth for a full ceramic and metal-ceramic crown.
Preparation of an upper canine and premolar tooth for a full ceramic and metal-ceramic crown.
Making a precision impression of the jaw and alginate antagonist impression of the upper arch. Fabricating a temporary bridge and crown.
Making a precision impression of the jaw and alginate antagonist impression of the upper arch. Fabricating a temporary bridge and crown.
Making a precision impression of the jaw and alginate antagonist impression of the upper arch. Fabricating a temporary bridge and crown.
Making a precision impression of the jaw and alginate antagonist impression of the upper arch. Fabricating a temporary bridge and crown.
Gypsing the section and antagonist model to the articulator. Making the wax pattern for a lower metal-ceramic bridge.
Gypsing the section and antagonist model to the articulator. Making the wax pattern for a lower metal-ceramic bridge.
Gypsing the section and antagonist model to the articulator. Making the wax pattern for a lower metal-ceramic bridge.
Gypsing the section and antagonist model to the articulator. Making the wax pattern for a lower metal-ceramic bridge.
Making the wax pattern for a lower metal-ceramic bridge.
Making the wax pattern for a lower metal-ceramic bridge.
Making the wax pattern for a lower metal-ceramic bridge.
Making the wax pattern for a lower metal-ceramic bridge.
Students take a lower and upper anatomical impression and waxbiting from each other. Making anatomical models and gypsing them to the articulator.
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Students take a lower and upper anatomical impression and waxbiting from each other. Making anatomical models and gypsing them to the articulator.

Demonstration and practise of using a facebow. Practising the preparation.

Demonstration and practise of using a facebow. Practising the preparation.

Demonstration and practise of using a facebow. Practising the preparation.

Seminars

Exam topics/questions

Participants

Dr. Benke Beáta (BEBFADO.PTE), Dr. Marada Gyula (MAGFABO.PTE)
# OSE-IM1 IMUNPATHOLOGY 1

**Course director:**
Dr. Péter NÉMETH, professor
Department of Immunology and Biotechnology

2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 5

<table>
<thead>
<tr>
<th>Number of hours/semester:</th>
<th>28 lectures + 0 practices + 0 seminars = total of 28 hours</th>
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<tbody>
<tr>
<td>Course headcount limitations (min.-max.):</td>
<td>5 – 300</td>
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</table>

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

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**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**

Making up for missed classes

None

**Reading material**

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

<table>
<thead>
<tr>
<th></th>
<th>Targeting type immune reactions against well conserved antigens</th>
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<tbody>
<tr>
<td></td>
<td>Dr. Németh Péter</td>
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<tr>
<td></td>
<td>Basic mechanisms of the autoimmune diseases</td>
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<td>Dr. Németh Péter</td>
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<td></td>
<td>Physiological autoimmunity</td>
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<td>Dr. Németh Péter</td>
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<td>Immunosuppression on autoimmune diseases</td>
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<td></td>
<td>Dr. Németh Péter</td>
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<td></td>
<td>Systemic autoimmune diseases</td>
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<td>Dr. Németh Péter</td>
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<td>Autoimmune steady state</td>
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<td>Dr. Németh Péter</td>
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<td>Organ specific autoimmune diseases</td>
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<td>Dr. Németh Péter</td>
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<td>Immunological tolerance</td>
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<td>Dr. Németh Péter</td>
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<td></td>
<td>Non-specific and antigens specific immunosuppression for protection of grafted tissues</td>
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<td></td>
<td>Dr. Németh Péter</td>
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<tr>
<td></td>
<td>Failures of the immunological tolerance</td>
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<td></td>
<td>Dr. Németh Péter</td>
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<td></td>
<td>Role of genetically conserved antigens under physiological conditions</td>
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<td></td>
<td>Dr. Németh Péter</td>
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<tr>
<td></td>
<td>Natural antibodies in pathological immune regulation</td>
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<td></td>
<td>Dr. Németh Péter</td>
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</tbody>
</table>
0 Allergic reactions in health and diseases
   Dr. Németh Péter
0 Immunological aspects or organ transplantation
   Dr. Németh Péter
0 Medical biotechnological perspectives on immunotherapies
   Dr. Németh Péter
0 Basic mechanism of hypersensitive reactions
   Dr. Németh Péter
0 Main trends in the immunological laboratory diagnostics
   Dr. Németh Péter
0 Hereditied and acquired immunodefficiencies
   Dr. Németh Péter
0 Tumor escape
   Dr. Németh Péter
0 Hypersensitive immunereactions as immunopathological background of different diseases
   Dr. Németh Péter
0 Delayed type hypersensitivity in chronic inflammatory diseases
   Dr. Németh Péter
0 Immunity against tumors
   Dr. Németh Péter
0 Biotherapies in malignant diseases
   Dr. Németh Péter
0 Tumor vaccines
   Dr. Németh Péter
0 Pathological autoimmunity
   Dr. Németh Péter
0 Biotherapies of autoimmune diseases
   Dr. Németh Péter
0 Natural antibodies in physiological immune regulation
   Dr. Németh Péter
0 Problems of the vaccine development in HIV infection
   Dr. Németh Péter

Practices

Seminars

Exam topics/questions

See the www.immbio.hu web site before 4 weeks of exam period.

Participants
OSE-MUA  |  BASIC SURGICAL TECHNIQUES
---|---
**Course director:**  |  **DR. GÁBOR JANCSÓ,** associate professor
Department of Surgical Research and Techniques

<table>
<thead>
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<th>2 credit</th>
<th>midsemester grade</th>
<th>Elective subject</th>
<th>autumn semester</th>
<th>recommended semester: 5</th>
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<th>Course headcount limitations (min.-max.):</th>
<th>5 – 200</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Prerequisites:</th>
<th>OSA-AA2 completed + OSA-ET2 completed</th>
</tr>
</thead>
</table>

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

**Topic**

The aim of the subject is to practice the basic surgical techniques, to present hygienic approach, which attainments are indispensible 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**

According to the Code of Studies and Examinations.

**Mid-term exams**

**Making up for missed classes**

Attendance is obligatory at every practice. Because of the limited capacity of our operating theatre absence cannot be solved by joining another group. One missed practice can be repeated in the 11th week of the semester. The exact time will be on the website of the institute (http://soki.aok.pte.hu).

**Reading material**

- Obligatory literature
- Literature developed by the Department
  - http://soki.aok.pte.hu/
- Notes
- Recommended literature

**Lectures**

1. Presentation of the Department and the curriculum. The history of surgery.  
   Dr. Jancsó Gábor
2. Demonstration of the operating room and technical background, sterilisation, desinfection.  
   Dr. Alotti Nasri
3. Basic surgical tools and surgical materials, wound closure techniques.  
   Dr. Hardi Péter
4. Classification and managements of wounds, principle of wound-healing, haemorrhage and bleeding control  
   Dr. Koreny Tamás
5. The operation (acute, elective, patient preoperative management, surgical explorations)  
   Dr. Nagy Tibor Aladár
6. Basics of laparoscopic surgery  
   Dr. Juhász Árpád Imre

**Practices**

1. The basic rules of the behavior in the operating theatre; scrubbing-gowning-gloving, preparation of the operation area (desinfection, isolation).  
2. The basic rules of the behavior in the operating theatre; scrubbing-gowning-gloving, preparation of the operation area (desinfection, isolation).
3. Demonstration of the basic surgical tools, practicing their use.
4. Demonstration of the basic surgical tools, practicing their use.
5. Knot tying.
7. Sutures and suture materials, suture removal.
8. Sutures and suture materials, suture removal.
9. Practicing of basic sutures on skill models.
10. Practicing of basic sutures on skill models.
11. Practicing of basic sutures on skill models.
12 Practicing of basic sutures on skill models.
13 Repetition of previous learned techniques.
14 Repetition of previous learned techniques.
16 Basics of laparoscopic surgery: demonstration of laparoscopic surgical tools, training of eye-hand coordination.
17 Laparoscopic training in boxtrainer.
18 Laparoscopic training in boxtrainer.
19 Laparoscopic training in boxtrainer.
20 Laparoscopic training in boxtrainer.
21 Practical exam, skill assessment.
22 Practical exam, skill assessment.

Seminars

Exam topics/questions

http://soki.aok.pte.hu/

Participants

Dr. Alotti Nasri (ALNHAAE.PTE), Dr. Bognár Laura (BOLOAA-O.PTE), Dr. Hardi Péter (HAPFAAO.PTE), Dr. Jancsó Gábor (JAGMAAO.PTE), Dr. Juhász Árpád Imre (JUFAAO.PTE), Dr. Koreny Tamás (KOTOAA-O.PTE), Dr. Nagy Tibor Aladár (NATIAAO.PTE), Dr. Takács Ildikó (TAIFAAO.PTE)
OSE-TD3  

**STUDENT PROJECT RESEARCH 3**

**Course director:** DR. TIBOR ERTL, professor

Undergraduate Research

- **2 credit**  
- midterm grade  
- Elective subject  
- both semesters  
- semester  
- recommended semester: 5

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

**Course headcount limitations (min.-max.):** 1 – 300

**Prerequisites:** OSF-TD2 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). In case of changing the place of work, the subject series can not be re-started.

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

- Not applicable

**Reading material**

- Obligatory literature

- Literature developed by the Department

- Notes

- Recommended literature

  Not applicable

**Lectures**

**Practices**

1-24 Research

**Seminars**

**Exam topics/questions**

Not applicable

**Participants**

Dr. Balogh Péter (BAPOAGP.PTE)
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 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

1 Introduction of Translational Medicine
   Dr. Hegyi Péter
2 Three pillars of Translational Medicine. „Excellence has no match. For an outstanding performance you need an outstanding team.”
   Dr. Hegyi Péter
3 Measuring scientific performance
   Dr. Hegyi Péter
4 Systems and organizations in Science. „Measure what is measurable, and make measurable what is not so.”
   Dr. Hegyi Péter
5 Clinical questions nearby the patient
   Dr. Hegyi Péter
6 Searching information in databases. „A good question needs more knowledge than an average answer.”
   Dr. Hegyi Péter
7 The role of basic science in Translational medicine I.
   Dr. Hegyi Péter
8 The role of basic science in in Translational medicine II. „Judge a man by his questions rather than by his answers”
   Dr. Hegyi Péter
9 The role of pre-clinical studies in Translational medicine I.
   Dr. Hegyi Péter
The role of pre-clinical studies in Translational medicine II. ,,That which can be asserted without evidence, can be dismissed without evidence.”
Dr. Hegyi Péter

Evidence based medicine, UpToDate, GRADE (EBM)
Dr. Hegyi Péter

The role of EBM in everyday practice. ,,The most often characteristics of foreseeable events that they are foreseeable.“
Dr. Hegyi Péter

Importance of patient registries in Translational medicine
Dr. Hegyi Péter

Structure of patient registries, follow ups. Biobank. ,,Magic mirror in my hand, who is the fairest in the land?”
Dr. Hegyi Péter

Ethical approval, international registries, COPE-
Dr. Hegyi Péter

Data management. Steps from data entry to quality check. ,,Trust is good, but control is better.”
Dr. Hegyi Péter

Types of clinical investigation (CONSORT, SPIRIT)
Dr. Hegyi Péter

International guidelines for clinical investigations (STROBE, STARD, STREGA) ,,Great ideas are often shattered by everyday practice.”
Dr. Hegyi Péter

Statistical analysis for clinical investigations.
Dr. Hegyi Péter

IT systems, importance of development. ,,I have had my results for a long time: but I do not yet know how I am to arrive at them.”
Dr. Hegyi Péter

The importance of meta-analysis for basic- and clinical investigations.
Dr. Hegyi Péter

International guidelines for meta-analysis (PRISMA, MOOSE-, PROSP-ERO). ,,It is not the possession of truth, but the success which attends the seeking after it, that enriches the seeker and brings happiness to him.”
Dr. Hegyi Péter

Statistical consideration of meta-analysis.
Dr. Hegyi Péter

Opportunities in Translational Medicine, closing lecture. ,,Where the road ends the journey/fun begins”
Dr. Hegyi Péter

Test
Dr. Hegyi Péter

Test. ,,Doubt is not a pleasant condition, but certainty is absurd.”
Dr. Hegyi Péter

Practices
Seminars
Exam topics/questions
Exam topics are based on lectures.
Participants
OS-E-TMG  TRANSLATIONAL MEDICINE: BACK TO THE FUTURE (PRACTICE)

Course director: DR. PÉTER HEGYI, professor
Institute for Translational Medicine

2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 5

Number of hours/semester: 0 lectures + 10 practices + 14 seminars = total of 24 hours

Course headcount limitations (min.-max.): 5 – 100

Prerequisites: OSA-ET2 completed + OSA-NAN completed + OSF-TME 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 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

Practices

1  Data processing of databases, excel database I
2  Data processing of databases, excel database II
3  Design of investigations I
4  Design of investigations II
5  Practical guidelines of meta-analysis I
6  Practical guidelines of meta-analysis II
7  Practical guidelines of meta-analysis III
8  Practical guidelines of meta-analysis IV
10  Abstarct, Lecture, Article: When, What, Why and for Whom? II

Seminars

1  Basic Science meeting I
2  Basic Science meeting II
3  Metaanalysis meeting I
4  Metaanalysis meeting II
5  Registries meeting I
6  Registries meeting II
Exam topics/questions

Exam topics are based on the practices and seminars.

Participants

Dr. Hegyi Péter (YFWHVM)
OSF-COP  PATHOPHYSIOLOGY OF CHRONIC OBSTRUCTIVE LUNG DISEASES (COPD)

Course director: Dr. MÁRTA BALASKÓ, associate professor
Institute for Translational Medicine

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.): 3 – 100

Prerequisites: OSA-BK2 completed + OSA-ET2 completed + OSP-KO1 parallel

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

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.
   Dr. Balaskó Márta
13 Specific spirometric features of different types of COPD. Discussion of case histories.
   Dr. Balaskó Márta
14 Test. Discussion of results.
   Dr. Balaskó Márta

Practices

Seminars

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

The grade depends on the test score.

Participants
OSF-DIM  IMMUNOLOGY OF THE SKIN
Course director:  DR. TIMEA BERKI, professor
Department of Immunology and Biotechnology

1 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 5
Number of hours/semester:  14 lectures • 0 practices • 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 3 – 100
Prerequisites: OSA-IMM 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. Najbauer József
3  Langerhans cell network in the skin
   Dr. Najbauer József
4  Immunological mechanisms behind wound healing
   Dr. Najbauer József
5 Atopic dermatitis, bullous skin diseases, psoriasis
   Dr. Gyulai Rolland Péter
6 Atopic dermatitis, bullous skin diseases, psoriasis
   Dr. Gyulai Rolland Péter
7 Signal transduction; epigenetics
   Dr. Najbauer József
8 Hypoxia
   Dr. Najbauer József
9 In vitro experimental techniques; autologous tissue transplantation; artificial skin
   Dr. Najbauer József
10 Allergy
   Dr. Berki Timea
11 Skin tumors, melanoma, new treatment strategies
   Dr. Lengyel Zsuzsanna
12 Skin tumors, melanoma, new treatment strategies
   Dr. Lengyel Zsuzsanna
13 Scleroderma
   Dr. Czirják László István
14 Scleroderma
   Dr. Czirják László István

Practices

Seminars

Exam topics/questions
-

Participants
IMMUNOLOGICAL TECHNIQUES IN LABORATORY PRACTICE

Course director: DR. TIMEA BERKI, professor
Department of Immunology and Biotechnology

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5

Number of hours/semester: 10 lectures + 4 practices + 0 seminars = total of 14 hours

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

Prerequisites: OSA-IMM completed

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

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.

Topics:

1. Characteristics of immunological laboratory diagnostic methods
2. Principals of immunoserological techniques. Precipitation and agglutination based methods, ELISA, RIA, FIA, dot blot, immunoblot techniques.
3. Isolation and light microscopy based investigation of blood and other body fluids
4. Immunocytochemistry
5. Immunohistochemistry
6. Flow cytometry I.
7. Flow cytometry II.
8. Cell and tissue culture based immunological investigations
9. Methods of HLA typing
10. Diagnostics of systemic autoimmune diseases
11. Diagnostics of organ specific autoimmune diseases
12. Application of monoclonal antibody based therapy
13. Immunotherapies of tumors
14. Diagnostics of immunodeficiencies

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. Characteristics of immunological laboratory diagnostic methods
   Dr. Berki Timea
2. Immunoserology
   Dr. Berki Timea
3. Cellular immunological methods
   Dr. Berki Timea
4. Flow cytometry
   Dr. Berki Timea
5. Diagnostics of systemic autoimmune diseases
   Dr. Simon Diána
6 Diagnostics of organ specific autoimmune diseases  
   Dr. Simon Diána  
7 HLA typing  
   Dr. Simon Diána  
8 Monoclonal antibody based therapy  
   Dr. Simon Diána  
9 Potentials in immunotherapies of tumors  
   Dr. Berki Timea  
10 Diagnostics of immunodeficiencies  
   Dr. Berki Timea

Practices
1 Immunoserology I-II  
2 Cellular immunological methods, Flow cytometry  
3 Immunocytochemistry, Immunohistochemistry  
4 Vaccine designing

Seminars

Exam topics/questions

Participants
Dr. Berki Timea (BETMABO.PTE), Dr. Simon Diána (SIDFABO.PTE)
Medical Humanities

Course director: Dr. Tamás Molnár F., professor
Department of Operational Medicine

2 credit • midsemester grade • Optional 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.): 5 – 100 Prerequisites: OSA-AA2 completed + OSA-ET2 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 Orto-rhino-laryngology patographies in Medical Humanities aspect
  Dr. Molnár F. Tamás
8 Medical Humanistic approach of Surgery
  Dr. Molnár F. Tamás
9 Genetics - the history behind the story
  Dr. Molnár F. Tamás
10 Forensics Medicine: literature, film and the modern media - the history behind the stories
  Dr. Molnár F. Tamás
11 Infectious diseases and epidemics - their historical aspects and literary reflections (D. Defoe: A Journal of the Plaque Year)
  Dr. Molnár F. Tamás
12 Cultural aspects of addictology - alcohol, nicotine, drugs and addicts
  Dr. Molnár F. Tamás
13 Surgery of Penetrating Trauma of Chest Cavities - it’s past, present and the arts (St Sebastian)
  Dr. Molnár F. Tamás
Oncology (W. H. Auden: Miss Gee, A. Solzhenitsyn: Cancer Ward , J. Updike)
Dr. Molnár F. Tamás

The Bible and medical treatment - Old Testament/New Testament
Dr. Molnár F. Tamás

The metamorphosis of the concept of health and illness: from the Ten Plaques of Egypt to the Purification through Suffering. The death - Thanatos, Styx
Dr. Molnár F. Tamás

Saints, Christian Church and disease - 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 (Münchausen to Pickwick)
Dr. Molnár F. Tamás

Social traumatology: the Trianon Syndrome
Dr. Molnár F. Tamás

Anaesthesia, Intensive therapy - lessons learnt from history
Dr. Rendeki Szilárd

The relation of literature to illnesses (s. Sonntag: Illness as a Metaphore)
Dr. Molnár F. Tamás

Writers, poets, doctors and illnesses (Molière, Shakespeare, Ibsen)
Dr. Molnár F. Tamás

Social Sciences and Medicine (Foucault)
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 a cultured 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

Practices

Seminars

Exam topics/questions

Grades will be based on the lectures and the recommended readings.

Participants
OSF-MME  MOLECULAR MEDICINE

Course director: DR. JUDIT PONGRÁČZ, professor
Department of Pharmaceutical Biotechnology

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!

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**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
2 The genome
   Dr. Pongrácz Judit
3 Sequencing of the genome
   Dr. Pongrácz Judit
4 Investigation of the human genome with microarrays
   Dr. Pongrácz Judit
5 Genes and diseases
   Dr. Pongrácz Judit
6 Nuclear receptors
   Dr. Pongrácz Judit
7 Personalized genetics
   Dr. Pongrácz Judit
8 Immunodeficiencies
   Dr. Pongrácz Judit
9 Cancers (introduction)
   Dr. Pongrácz Judit
10 Molecular mechanisms of cancer development
   Dr. Pongrácz Judit
11 Obesity: introduction
   Dr. Pongrácz Judit
12 Genomics of obesity
   Dr. Pongrácz Judit
13 Genes involved in development of obesity
   Dr. Pongrácz Judit
14 Therapeutic approaches to obesity. Interconnected mechanisms in lipid metabolism
   Dr. Pongrácz Judit
Practices
Seminars
Exam topics/questions
www.medbiotech.com
Participants
OSF-MOD

Molecular Diagnostics

Course director: Dr. Judit Pongrácz, professor
Department of Pharmaceutical Biotechnology

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
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
2 Mutations, polymorphisms. The genetic code.
   Dr. Pongrácz Judit
3 Mutations, polymorphisms. The genetic code.
   Dr. Pongrácz Judit
4 Special mutation consequences.
   Dr. Pongrácz Judit
5 Dynamic mutations.
   Dr. Pongrácz Judit
6 Mendelian inheritance.
   Dr. Pongrácz Judit
7 Multifactorial diseases.
   Dr. Pongrácz Judit
8 Examples for monogenic diseases.
   Dr. Pongrácz Judit
9 Examples for monogenic diseases.
   Dr. Pongrácz Judit
10 Examples for monogenic diseases.
   Dr. Pongrácz Judit
11 Pharmacogenetics.
   Dr. Pongrácz Judit
12 Molecular testing in oncology.
   Dr. Pongrácz Judit
13 Methodology of the molecular diagnostic procedures.
   Dr. Pongrácz Judit
14 Methodology of the molecular diagnostic procedures.
   Dr. Pongrácz Judit
Practices
Seminars
Exam topics/questions
www.medbiotech.com
Participants
OSF-MOT   MOLECULAR THERAPIES

Course director:  

DR. JUDIT PONGRÁČZ, professor
Department of Pharmaceutical Biotechnology

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
- Recommended literature

Lectures
1  Functional genomics I
Dr. Pongrácz Judit

2  Functional genomics II
Dr. Pongrácz Judit

3  Recombinant protein expression
Dr. Pongrácz Judit

4  Gene therapy, in vivo gene therapy
Dr. Pongrácz Judit

5  Ex vivo gene therapy, Therapies based on protein replacement I
Dr. Pongrácz Judit

6  Therapies based on protein replacement II
Dr. Pongrácz Judit

7  Recombinant antibodies and phage phage display technique
Dr. Pongrácz Judit

8  Anti-cytokine therapy (Sepsis)
Dr. Pongrácz Judit

9  Transgene technology and mouse models in modern biological research
Dr. Pongrácz Judit

10 Embryonic and adult stem cells for regenerative medicine I
Dr. Pongrácz Judit

11 Embryonic and adult stem cells for regenerative medicine II
Dr. Pongrácz Judit

12 Cell cycle and cancer therapy, p53 I
Dr. Pongrácz Judit

13 Cell cycle and cancer therapy, p53 II
Dr. Pongrácz Judit

14 Gene silencing technologies
Dr. Pongrácz Judit
Practices
Seminars
Exam topics/questions
www.medbiotech.com
Participants
OSF-PRB  PROTEIN BIOTECHNOLOGY
Course director:  DR. JUDIT PONGRÁCZ, professor
Department of Pharmaceutical Biotechnology

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
Biochemical properties of proteins. Protein synthesis. Review of the differences between procaryotic and eucaryotic protein synthesis.

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  Biochemical properties of proteins. Protein synthesis. Review of the differences between procaryotic and eucaryotic protein synthesis.
   Dr. Pongrácz Judit
2  Protein folding, the formation of 3D structure. Chaperons. Folding problems and folding diseases.
   Dr. Pongrácz Judit
3  Protein sorting and targeting.
   Dr. Pongrácz Judit
4  Study of protein structures: X-ray crystallography, NMR, mass spectrometry.
   Dr. Pongrácz Judit
5  Protein purification (chromatography, electrophoresis) and analysis (SDS-PAGE, 2 dimensional electrophoresis, mass spectrometry).
   Dr. Pongrácz Judit
6  Posttranslational modification of proteins and their analysis using proteomics methods.
   Dr. Pongrácz Judit
7  Protein-protein interactions and their analysis: yeast two hybrid system, mass spectrometry, Biacore and other techniques.
   Dr. Pongrácz Judit
8  Heterologue expression I: Homologue and heterologue expression, biopharming; expression systems, criteria to the selection of expression platforms, heterologue expression in Escherichia coli, formation of inclusion body, periplasmic secretion, formation of disulfide bonds.
   Dr. Pongrácz Judit
9  Heterologue expression II: The disadvantages of the Escherichia coli system, development of new expression platforms; protein expression in gram-positive bacteria: the Staphylococcus carnosus expression system; Protein expression in yeasts; the Saccharomyces cerevisiae and the Pichia pastoris expression platforms.
   Dr. Pongrácz Judit
10 Heterologue expression III: The disadvantages of the microbial protein expression; heterologue expression in plant cell cultures, transformation with Agrobacteria, expression in mammalian cell, functionalized cells; heterologue expression in insect cell lines, the baculovirus-insect cell expression system.
   Dr. Pongrácz Judit
11 Definition of protein engineering; de novo design, artificial growing factors; rational design, site-directed mutagenesis; directed evolution, random mutagenesis, DNA shuffling, exon shuffling.  
Dr. Pongrácz Judit

12 Production of human therapeutic proteins. Biopharmaceuticals, production of human therapeutic proteins; production of insulin, protein engineering of insulin; development of recombinant Hepatitis B vaccine; production of monoclonal antibodies; problems with the storage, in vivo stability and administration of therapeutic proteins.  
Dr. Pongrácz Judit

13 Production of human therapeutic enzymes: Enzymes in human therapy; production, and human therapeutically application of deoxyribonuclease I, &lt;glucocerebrosidase, urate oxidase and L-asparaginase, mechanism of action.  
Dr. Pongrácz Judit

14 Production of diagnostic enzymes. Importance of enzymes in diagnosis, production and application of glucose oxidase, galactose oxidase, cholesterol oxidase and horseradish peroxidase; protein engineering of enzymes. The application of therapeutic proteins. Possible administration, perspectives and future possibilities. The national and international requirements for protein therapeutic products.
Dr. Pongrácz Judit

Practices
Seminars
Exam topics/questions
www.medbiotech.com
Participants
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. The pathomechanism of allergies
   Dr. Berki Timea
2. The mechanism of delayed type hypersensitive (DTH) reactions
   Dr. Berki Timea
3. The types of allergic diseases and their epidemiology
   Dr. Berki Timea
4. Types of allergens and the diagnostic possibilities
   Dr. Berki Timea
5. Mucosal immunity, oral tolerance
   Dr. Berki Timea
6. Upper airway allergies
   Dr. Piski Zalán Szabolcs
7. Asthma, lower airway allergies
   Dr. Mosdósi Bernadett
8. Pathomechanism of urticaria, atopic dermatitis
   Dr. Gyulai Rolland Péter
9. Contact dermatitis
   Dr. Gyulai Rolland Péter
10. Pathomechanism of nutritive allergies
    Dr. Sütő Gábor
11. Immune mediated gastrointestinal diseases
    Dr. Sütő Gábor
12 Drug allergies, anaphylactic reaction  
   Dr. Berki Timea  
13 Pharmacotherapy of allergic diseases  
   Sánticsné Dr. Pintér Erika  
14 New therapeutic possibilities  
   Dr. Berki Timea

Practices
Seminars
Exam topics/questions
-
Participants
The Antimicrobial Drugs and Their Clinical Use

Course director: Dr. Béla KoCsis, associate professor
Department of Medical Microbiology and Immunology

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 5 – 100 Prerequisites: none

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
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 Characterisation of antimicrobial drugs, sensitivity and resistance
   Dr. Kocsis Béla
5 Pharmacokinetics and pharmacodynamics of anti-infective drugs
   Dr. Kocsis Béla
6 The antibiotic prophylaxis.
   Dr. Kocsis Béla
7 The empiric antimicrobial therapy
   Dr. Kocsis Béla
8 The antimicrobial therapy based on microbiologic result
   Dr. Kocsis Béla
9 The choice of best antimicrobial drug
   Dr. Kocsis Béla
10 The reasons of an unsuccessful antimicrobial therapy
   Dr. Kocsis Béla
11 The antimicrobial drugs in details. The inhibitors of the cell wall biosynthesis Beta-lactams Penicillins
   Dr. Kocsis Béla
12 Cephalosporins
   Dr. Kocsis Béla
13 Carbapenems, monobactams, glicopeptides
   Dr. Kocsis Béla
14 The inhibitors of the protein biosynthesis Aminoglicosides
   Dr. Kocsis Béla

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15  Tetracyclines Chloramphenicol Macrolides  
    Dr. Kocsis Béla 
16  The inhibitors of the nucleic acid biosynthesis Rifampins Sulfonamides  
    Dr. Kocsis Béla 
17  Kinolons Fluorokinolons  
    Dr. Kocsis Béla 
18  The antmycotic drugs  
    Dr. Kocsis Béla 
19  The antmycotic drugs  
    Dr. Kocsis Béla 
20  The antiviral drugs  
    Dr. Kocsis Béla 
21  The antiviral drugs HIV - AIDS  
    Dr. Kocsis Béla 
22  The antiparasitic therapy. The chemoprophylaxis of malaria  
    Dr. Kocsis Béla 
23  The antimicrobial therapy of respiratory and urinary tract infections  
    Dr. Kocsis Béla 
24  Cardiovascular and wound infections, sepsis  
    Dr. Kocsis Béla 
25  Central nervous system, abdominal and enteric infections  
    Dr. Kocsis Béla 
26  Antimicrobial therapy of patients under immunosuppression, pregnancy....  
    Dr. Kocsis Béla 
27  The pharmacological aspects of antimicrobial therapy  
    Dr. Kocsis Béla 
28  The future of antimicrobial therapy  
    Dr. Kocsis Béla 

Practices 
Seminars 
Exam topics/questions 
None 
Participants
OSE-DM4  DEMONSTRATOR ACTIVITY 4

Course director: DR. LÁSZLÓ JÓZSEF CZOPF, associate professor
1st Department of Internal Medicine

2 credit • midterm grade • Elective subject • both semesters semester • recommended semester: 6

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 1 – 300 Prerequisites: OSE-DMD3 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 four semesters (in a total value of 8 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 28 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 Demonstrators:
https://docs.google.com/document/d/1xkkveRdZcDphnqWEk0N0SQf34MnBBJqogG09fod8Rw/edit?usp=sharing
Faculty Home Page of the Circle of Demonstrators (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 28 hours demonstrator activity.

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

Recommended literature Lectures Practices
1-28 Demonstrator activity

Seminars
Exam topics/questions
The topics of the tests depend on the specific course of the demonstrator activity.

Participants
Dr. Czopf László József (CZLMAAO.PTE), Dr. Tamás Andrea (TAAFAAO.PTE)
**OSE-FPP-A**  
**PROSTHODONTICS: BASICS - PRACTICES "A"**  
**Course director:**  
**DR. BEATA BENKE, clinical specialist**  
**Department of Dentistry, Oral and Maxillofacial Surgery**

<table>
<thead>
<tr>
<th>Course description</th>
<th>Credit</th>
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<th>Elective subject</th>
<th>Spring semester</th>
<th>Recommended semester: 6</th>
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<td>Prerequisites</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 aim of this course is to inform students about clinical and technological aspects of fixed and removable partial dentures. During the practices the students has to successfully fulfill the requirements of the technical procedures.

**Conditions for acceptance of the semester**

Practical requirements are handled on the first week of the semester.

Requirements for students

- Active participation on practices, based on the Study and Exam Regulations of the University,
- Attendance of practices is mandatory.
- Completion of the tasks in the laboratory

**Practice:**

- Average of the marks receiving for the practical tasks in the training laboratory. The average must be at least 2.0. If the student gets 3 or more failed marks during the semester for his/her practical work, then the semester can not be evaluated and accepted.
- Average of the marks of written or oral tests relating the theoretical knowledge which is necessary to carry out the practical work. The average must be at least 2.

**Form of tests:**

Oral test, written test, etc. - The mark of these may be max. 3 times failed (1), after collecting three failed marks the student has to improve it through a written test, the topic is given by the tutor. The student gets one opportunity to write the test. If the student gets further failed mark, the semester/practice is not accepted, it can not be evaluated.

- If either of the above averages (for the practical work or the relating theory) does not reach 2.0 the end semester practical mark can not be evaluated and accepted, the student has to repeat the course.

**Consequences of coming late to the practice**

Students must come to the practice on time. If a student is late three times, it is equal with one missing. If a

**Mid-term exams**

According to Code of Studies and Examinations

**Making up for missed classes**

None

**Reading material**

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

**Recommended literature Lectures Practices**

<table>
<thead>
<tr>
<th>Chapter</th>
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<tbody>
<tr>
<td>1</td>
<td>Upper and lower impression about edentulous ridge, fabrication of gypsum models</td>
</tr>
<tr>
<td>2</td>
<td>Upper and lower impression about edentulous ridge, fabrication of gypsum models</td>
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<td>3</td>
<td>Upper and lower impression about edentulous ridge, fabrication of gypsum models</td>
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<td>4</td>
<td>Upper and lower impression about edentulous ridge, fabrication of gypsum models</td>
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<td>5</td>
<td>Upper and lower impression about edentulous ridge, fabrication of gypsum models</td>
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<td>6</td>
<td>Upper and lower impression about edentulous ridge, fabrication of gypsum models</td>
</tr>
<tr>
<td>7</td>
<td>Fabrication of upper and lower occlusal rims</td>
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<td>8</td>
<td>Fabrication of upper and lower occlusal rims</td>
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<td>9</td>
<td>Fabrication of upper and lower occlusal rims</td>
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12 Biteregistration
13 Biteregistration
14 Biteregistration
15 Biteregistration
16 Articulating of upper and lower gypsum models
17 Articulating of upper and lower gypsum models
18 Articulating of upper and lower gypsum models
19 Tooth set up
20 Tooth set up
21 Tooth set up
22 Tooth set up
23 Tooth set up
24 Tooth set up
25 Tooth set up
26 Tooth set up
27 Tooth set up
28 Tooth set up
29 Tooth set up
30 Tooth set up
31 Upper and lower impression about each other, waxbite
32 Upper and lower impression about each other, waxbite
33 Upper and lower impression about each other, waxbite
34 Upper and lower impression about each other, waxbite
35 Upper and lower impression about each other, waxbite
36 Upper and lower impression about each other, waxbite
37 Upper and lower impression about each other, face bow
38 Upper and lower impression about each other, face bow
39 Upper and lower impression about each other, face bow
40 Upper and lower impression about each other, face bow
41 Upper and lower impression about each other, face bow
42 Upper and lower impression about each other, face bow

Seminars

Exam topics/questions

Participants

Dr. Benke Beáta (BEBFADO.PTE), Dr. Marada Gyula (MAGFABO.PTE)
Rubrics: Causes of Expansion and Preventive Methods in Infectious Diseases

Course director: Dr. Zoltán Tigyi, assistant professor
Department of Medical Microbiology and Immunology

2 credit • midterm grade • elective subject • spring semester • recommended semester: 6

Number of hours/semester:
- 22 lectures + 0 practices + 6 seminars = total of 28 hours

Course headcount limitations (min.-max.): 2 – 22
Prerequisites: OSA-MB2 completed + OSP-MI1 completed

Topic

The aims of the course to help the students to get acquainted with:
- some important basic epidemiological methods (both classic and molecular ones)
- the factors play roles in spread of infectious diseases inside and outside of the hospital
- the methods that prevent and block the spread of infections,
- the emerging and re-emerging infections,
- the epidemiology and prevention of nosocomial (hospital acquired) infections,
- therapeutic principle of preventing and controlling the spread of antibiotic resistance

Conditions for acceptance of the semester

Students have to choose a sub-topic from the detailed topic list freely which is delineated on the first seminar and they have to prepare a presentation from their chosen topic by means of PowerPoint or other presentation software, under the supervision of the tutor. The lecture has to be given 10-15 minutes in duration.

- Further requirements: the student should give right answers to the basic questions of the topics that are currently under discussion and further active participation is also required on the seminars.
- Assessment: active participation on seminars: ~10%, the shown presentation: ~90%.
- In case of insufficient performance: 3 essay questions have to be answered, either oral or written form by common assent.

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 Beaudeau, 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

2. Basic concepts, aims and tools, short historical introduction. John Graunt, William Petty, John Snow, Peter A. Schleisner, Ignác Semmelweis, Joseph Lister, Louis Pasteur, Robert Koch
   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, PCR 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

    Dr. Tigyi Zoltán

11. Emerging and re-emerging Infections.
    Dr. Tigyi Zoltán

12. Emerging and re-emerging Infections.
    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

15. Epidemiology of the nosocomial (hospital acquired) infections, the major types: Catheter associated urinary tract infection, ventilation associated pneumonia.
    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

17. The aims and methods of the infectious disease surveillance. Local and regional systems.
    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

19. Factors and measures helping and inhibiting the development of antimicrobial resistance. Prevent infection, Diagnose and treat, infection effectively.
    Dr. Tigyi Zoltán

20. Factors and measures helping and inhibiting the development of antimicrobial resistance. Use antimicrobials wisely; Prevent transmission.
    Dr. Tigyi Zoltán

21. The possibilities of the prevention of infectious diseases specific methods; vaccination;
    Dr. Tigyi Zoltán

22. The possibilities of the prevention of infectious diseases aspecific methods....
    Dr. Tigyi Zoltán
**Practices**

**Seminars**

9 Presentations of the student’s chosen topics
10 Presentations of the student’s chosen topics
17 Presentations of the student’s chosen topics
18 Presentations of the student’s chosen topics
27 Presentations of the student’s chosen topics
28 Presentations of the student’s chosen topics

**Exam topics/questions**

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

**Participants**

Dr. Tigy Zoltán (TIZHAAE.PTE)


OSE-KLP  CLINICOPATHOLOGY
Course director: DR. LÁSZLÓ PAJOR, professor
Department of Pathology

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 6
Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 200 Prerequisites: OSP-PA1 completed

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

Topic
During the course of pathology the clinicopathological view is emphasized in order to aid the synthesis of clinical and laboratory data and alterations detected by macro- and microscopical examination. The development of basic clinicopathological thinking and differential diagnostic skills is required by the end of the pathology curriculum, which is further supported by the demonstration of a cases related to the subjects of Pathology-2 lectures.
Clinician partners, like internalist, oncologist, pediatrician, surgeon, haematologist, radiologist, neurologist, ENT specialist, etc. will also contribute to the demonstrations of real patients’s history.
Attendants are supposed to accomplish written text examination by the end of the course.

Conditions for acceptance of the semester
Accomplished Pathology-1.
Acceptance of the semester: according to the Code of Studies of Examination

Mid-term exams
Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
  1. Pathology Catechism - 140 Q & A from the exanted topics of General Pathology - e-format.
  2. Collection of 40 clinicopathology case demonstrations (patient’s history and course of diseases with lab.data, radiological, macro- and microscopical images, etc) - e-format.
- Notes
- Recommended literature
Pajor L.: Pathology Catechism, 2015

Lectures
1 Clinicopathology
   Dr. László Terézia
2 Clinicopathology
   Dr. László Terézia
3 Clinicopathology
   Dr. Pajor László
4 Clinicopathology
   Dr. Pajor László
5 Clinicopathology
   Dr. Pajor László
6 Clinicopathology
   Dr. Pajor László
7 Clinicopathology
   Dr. Pajor László
8 Clinicopathology
   Dr. Kajtár Béla
9 Clinicopathology
   Dr. Kovács Krisztina
<table>
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<tr>
<td>Clinicopathology</td>
<td>Dr. Smuk Gábor</td>
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<td>Dr. Kajtár Béla</td>
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<td>Dr. Kereskai László</td>
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<tr>
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<td>Dr. Semjén Dávid</td>
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<tr>
<td>Clinicopathology</td>
<td>Dr. Kravják András</td>
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</table>

**Practices**

**Seminars**

**Exam topics/questions**

Type of exam: test, progress grade

**Participants**
# OSE-OFP-B Operative Dentistry - Propedeutics - Practices "B"

**Course director:** Dr. Edina Lempel, assistant professor  
Department of Dentistry, Oral and Maxillofacial Surgery

<table>
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<th>2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6</th>
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<td>Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours</td>
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<td>Course headcount limitations (min.-max.): 3 – 25</td>
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<td>Prerequisites: OSA-AA2 completed + OSP-FPP completed + OSP-OFO parallel</td>
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The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Students should acquire the basic treatment methods of carious lesions.

**Conditions for acceptance of the semester**

Attending the classes, according to the rules of the Code of Studies and Examinations (Max 15% absence is accepted from the lectures and from the practices).

**Mid-term exams**

The practical work will be qualified and creates the final grade. During the semester the students write 3 tests. The results affect the semester grade.

**Making up for missed classes**

None

**Reading material**

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

  Sturdevant: Art and Science of Operative Dentistry

**Lectures**

**Practices**

1–28 Cavity preparation and restoration

**Seminars**

**Exam topics/questions**

**Participants**

Dr. Lempel Edina (LEEFAB.O.PTE)
**OSE-OFP-C  OPERATIVE DENTISTRY - PROPEDEUTICS - PRACTICES "C"**

**Course director:** DR. EDINA LEMPEL, assistant professor
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 6

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

Course headcount limitations (min.-max.): 3 – 25

Prerequisites: OSA-ANY completed + OSP-FPP completed + OSP-OFO parallel

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

---

**Topic**

Students should acquire the basic treatment methods of carious lesions.

**Conditions for acceptance of the semester**

Attending the classes, according to the rules of the Code of Studies and Examinations (Max 15% absence is accepted from the lectures and from the practices).

**Mid-term exams**

The practical work will be qualified and creates the final grade. During the semester the students write 3 tests. The results affect the semester grade.

**Making up for missed classes**

**Reading material**

- Obligatory literature
  - Sturdevant: Art and Science of Operative Dentistry

- Literature developed by the Department

- Notes

**Recommended literature Lectures Practices**

1-14 Preparation

**Seminars**

**Exam topics/questions**

**Participants**

Dr. Lempel Edina (LEEPABO.PTE)
OSE-OFP-D OPERATIVE DENTISTRY - PROPEDEUTICS - PRACTICES ”D”
Course director: DR. EDINA LEMPEL, assistant professor
Department of Dentistry, Oral and Maxillofacial Surgery

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6
Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OSA-ANY completed + OSP-FPP completed + OSP-OFO parallel

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

Topic
Students should acquire the basic treatment methods of carious lesions.

Conditions for acceptance of the semester
Attending the classes, according to the rules of the Code of Studies and Examinations (Max 15% absence is accepted from the lectures and from the practices).

Mid-term exams
The practical work will be qualified and creates the final grade. During the semester the students write 3 tests. The results affect the semester grade.

Making up for missed classes
None

Reading material
- Obligatory literature
  Sturdevant: Art and Science of Operative Dentistry
- Literature developed by the Department
- Notes

Recommended literature Lectures Practices
1-28 Cavity preparation and restoration

Seminars

Exam topics/questions

Participants
Dr. Lempel Edina (LEEFABO.PTE)
# OSE-TD4  Student Project Research 4

**Course director:**

Dr. Tibor ERTL, professor

**Undergraduate Research**

<table>
<thead>
<tr>
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<th>DR. TIBOR ERTL, professor</th>
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<td><strong>Student Project Research 4</strong></td>
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<td><strong>both semesters</strong></td>
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<td><strong>Elective subject</strong></td>
<td><strong>both semesters</strong></td>
</tr>
<tr>
<td><strong>semester</strong></td>
<td><strong>recommended semester:</strong> 6</td>
</tr>
<tr>
<td><strong>Number of hours/semester:</strong></td>
<td><strong>0 lectures + 24 practices + 0 seminars = total of 24 hours</strong></td>
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<td><strong>Course headcount limitations (min.-max.):</strong></td>
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<td><strong>Prerequisites:</strong></td>
<td><strong>OSE-TD3 completed</strong></td>
</tr>
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</table>

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). In case of changing the place of work, the subject series can not be re-started.

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 and completion of Student Project Research 1/2 are mandatory. Acknowledging the course requires first-author presentation of work at a Students’ conference (UP or elsewhere) or Dean’s assay, or presentation at any professional conference relevant to the research field. Grades will be accorded corresponding to the criteria set out in the Rules and Regulations of SRS. For detailed requirements please read the following document: [http://aok.pte.hu/ru/download2.php?idf=11791&nyelv=eng](http://aok.pte.hu/ru/download2.php?idf=11791&nyelv=eng)

**Mid-term exams**

- Not applicable

**Reading material**

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

- Not applicable

**Lectures**

**Practices**

1-24 Research

**Seminars**

**Exam topics/questions**

- Not applicable

**Participants**

Dr. Balogh Péter (BAPOAGP.PTE)
**OSE-TFS PERFORMANCE-ENHANCING DRUGS, PHYSIOLOGY, PHARMACOLOGY AND CLINICAL ASPECTS**

**Course director:**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. GÁBOR POZSGÁL assistant professor</th>
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<tbody>
<tr>
<td>Department:</td>
<td>Department of Pharmacology and Pharmacotherapy</td>
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1 credit • midterm grade • Elective subject • spring semester • recommended semester: 6

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

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

**Prerequisites:** OSA-ET2 completed

**Topic**

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

**Conditions for acceptance of the semester**

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**

**Practices**

**Seminars**

1. Introduction
2. Anabolic steroids I
3. Anabolic steroids II
4. Beta 2 receptor agonists
5. Creatine
6. Dietary supplements
7. Gene doping and metabolic modulators I
8. Gene doping and metabolic modulators II
9. Enhancement of oxygen transport
10. Diuretics and other masking agents
11. Prohibited methods
12. Test

**Exam topics/questions**

1. Introduction
2. Anabolic steroids I
3. Anabolic steroids II
4. Beta 2 receptor agonists
5. Creatine
6. Dietary supplements
7. Gene doping and metabolic modulators I
8. Gene doping and metabolic modulators II
9. Enhancement of oxygen transport
10. Diuretics and other masking agents
11. Prohibited methods
Participants
Dr. Pozsgai Gábor (POGFAAO.PTE)
INTRODUCTION AND BASICS OF OPERATIONAL MEDICINE

Course director: Dr. Tamás Molnár F., professor
Department of Operational Medicine

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6
Number of hours/semester: 22 lectures + 6 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 5 – 25
Prerequisites: OSA-ET2 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. Farkas József
3 Basics of Armed Forces. The structure of The Hungarian Defence Forces and the NATO
   Dr. Rendeki Szilárd
4 Basics of Armed Forces. The structure of The Hungarian Defence Forces and the NATO
   Dr. Rendeki Szilárd
5 Tactical Emergency Medical Support.
   Dr. Rendeki Szilárd
6 Tactical Emergency Medical Support.
   Dr. Rendeki Szilárd
7 Tactical Combat Casualty Care, TCCC
   Dr. Rendeki Szilárd
8 Tactical Combat Casualty Care, TCCC
   Dr. Rendeki Szilárd
9 Military approach to medical planning in various operations, logistics, telemedicine, cultural/legal/humanitarian issues.
   Organizing and implementing international trainings in military medicine - lessons learned. NATO Vigorous Warrior 2015
   Dr. Rendeki Szilárd
Military approach to medical planning in various operations, logistics, telemedicine, cultural/legal/humanitarian issues. Organizing and implementing international trainings in military medicine - lessons learned. NATO Vigorous Warrior 2015
Dr. Rendeki Szilárd

Operational Medicine in historical perspective - Case-book. Extramedicinal representation
Dr. Molnár F. Tamás

Operational Medicine in historical perspective - Case-book. Extramedicinal representation
Dr. Molnár F. Tamás

Medical experiences learnt from recent wars: Vietnam to Afghanistan
Dr. Molnár F. Tamás

Medical experiences learnt from recent wars: Vietnam to Afghanistan
Dr. Molnár F. Tamás

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

Major Incident Medical Management and Support (MIMMS) in a nutshell
Dr. Nagy Bálint János

Major Incident Medical Management and Support (MIMMS) in a nutshell
Dr. Nagy Bálint János

Medical aspects of CBRN warfare
Dr. Maróti Péter Dezső

Medical aspects of CBRN warfare
Dr. Maróti Péter Dezső

Test
Dr. Rendeki Szilárd

Test
Dr. Rendeki Szilárd

Practices
1. Triage - Training in practice
2. Triage - Training in practice
3. Triage - Training in practice
4. Triage - Training in practice
5. Triage - Training in practice/field work
6. Triage - Training in practice/field work

Seminars
Exam topics/questions
-

Participants
Dr. Loibl Csaba (LOCGAAO.PTE), Dr. Molnár F. Tamás (MOFMAAO.PTE), Dr. Nagy Bálint János (NABGAAO.PTE), Dr. Rendeki Szilárd (RESGABA.PTE)
OSF-CTD  
LAB-ON-A-CHIP TECHNICS IN LABORATORY DIAGNOSTICS

Course director:  
DR. LILLA MAKSZIN, assistant professor  
Institute of Bioanalysis

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6
Number of hours/semester: 10 lectures + 16 practices + 0 seminars = total of 26 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 downscaling 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
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
9  Qualitative evaluation of „lab-on-a-chip”; methods by help of Agilent 2100 Expert software.  
Dr. Makszin Lilla
10 Qualitative evaluation of „lab-on-a-chip”; methods by help of Agilent 2100 Expert software.  
Dr. Makszin Lilla

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### Practices

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<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Preparation of samples (serum proteins, bacterial proteins, endotoxins, etc.)</td>
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<tr>
<td>2</td>
<td>Preparation of samples; covalent labeling with fluorescent dye</td>
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<td>3</td>
<td>Preparation of samples - denaturation</td>
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<td>4</td>
<td>Preparation of samples; filling the chip</td>
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<tr>
<td>5</td>
<td>Microchip electrophoretic measurement, separation with Agilent 2100 Bioanalyzer</td>
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<td>6</td>
<td>Qualitative analysis of samples</td>
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<td>7</td>
<td>Quantitative analysis of samples, evaluation by help of 2100 Expert software</td>
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<tr>
<td>8</td>
<td>Preparation of cell samples (bacteria, fungi, HeLa cells, etc.)</td>
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<td>9</td>
<td>Purification of cells</td>
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<td>10</td>
<td>Preparation of samples; labeling with fluorescent dyes 1. (live cells labeling)</td>
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<tr>
<td>11</td>
<td>Preparation of samples; labeling with fluorescent dyes 2. (dead cells labeling)</td>
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<td>12</td>
<td>Purification of labeled cells</td>
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<td>13</td>
<td>Preparation of samples; filling the chip</td>
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<td>14</td>
<td>Microfluidic measurement, cell counting with Agilent 2100 Bioanalyzer</td>
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<td>15</td>
<td>Evaluation of samples by help of 2100 Expert software</td>
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### Seminars

**Exam topics/questions**

The required information for the report will be explained in the course.

**Participants**

Dr. Makszin Lilla (MALHAAT.PTE)
OSF-FK2  DENTAL CLINICAL INFORMATICS AND STATISTICS 2

Course director: DR. GYULA MARADA, clinical specialist
Department of Dentistry, Oral and Maxillofacial Surgery

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

Number of hours/semester: 14 lectures + 14 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OSA-F11 completed

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

Topic
Practicing basic computing skills which are necessary in your future job.
The most widely used application and clinical software.
  Using Excel és PowerPoint.
  Dental Clinical informatics software
  Internet and finding info on the Internet

Conditions for acceptance of the semester
Activity at the classes, no more than two classes missed.

Mid-term exams
The tests and the home assignments all should be performed successfully. When any of those was unsatisfactory you would fail and you should take your “B” chance on a usual oral exam for the grade.

Making up for missed classes
One extra class.

Reading material
  - Obligatory literature
    Suggested literature will be discussed on first practice.
  - Literature developed by the Department
  - Notes
  - Recommended literature

Lectures
1  Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
   Dr. Pótó László
2  Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
   Dr. Pótó László
3  Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
   Dr. Pótó László
4  Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
   Dr. Pótó László
5  Computer applications at the diagnosis
   Dr. Marada Gyula
6  Computer applications at the diagnosis
   Dr. Marada Gyula
7  Digital radiography in Dentistry
   Dr. Marada Gyula
8  Dental patient software
   Dr. Marada Gyula
9  Informatical systems in Dentistry
   Dr. Marada Gyula
10  Make a presentation - the PowerPoint
   Dr. Pótó László
11  Make a presentation - the PowerPoint
   Dr. Pótó László
12  Make a presentation - the PowerPoint
   Dr. Pótó László
Using a spreadsheet - Excel
Dr. Pótó László

Using a spreadsheet - Excel
Dr. Pótó László

*Practices*

1. Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
2. Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
3. Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
4. Using Internet - connections and finding information. Databases of scientific literature and creating a Reference list
5. Computer applications at the diagnosis
6. Computer applications at the diagnosis
7. Digital radiography in Dentistry
8. Dental patient software
9. Informatical systems in Dentistry
10. Make a presentation - the PowerPoint
11. Make a presentation - the PowerPoint
12. Make a presentation - the PowerPoint
13. Using a spreadsheet - Excel
14. Using a spreadsheet - Excel

*Seminars*

*Exam topics/questions*

Create a thesis-like written work on a professional topic assigned by the Department. Create a presentation on your work.

*Participants*

Dr. Marada Gyula (MAGFABO.PTE), Dr. Pótó László (POLGABO.PTE)
**OSF-FM2**

**Data Analysis 2**

**Course director:**

DR. LÁSZLÓ PÓTÓ, associate professor

**Institute of Bioanalysis**

1 credit • midterm grade • Optional subject • both semesters semester • recommended semester: 6

**Number of hours/semester:**

7 lectures + 7 practices + 0 seminars = total of 14 hours

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

1 – 12

**Prerequisites:** OSA-Fi1 parallel

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 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. Evaluate your data and submit your own results based on your active participation.

**Mid-term exams**

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 - select the right methods
   Dr. Pótó László

5. Do your own statistical analysis 2 - interpret the results.
   Dr. Pótó László

6. Make your conclusion and share the results with the others.
   Dr. Pótó László

7. Summary. Consolidation and evaluation of the results.
   Dr. Pótó László
Practices
1. Find a paper to process. Work on your own data collection plan.
2. Present the realization of the data collection - based on selected papers
3. Share your experiences on your preliminary data preparations - make corrections if needed.
4. Present your own statistical analysis 1 - methods and results
5. Continue - methods and results
6. Make your conclusion and share the results with the others.
7. Overview and summarize the results of the class.

Seminars
Exam topics/questions
Evaluate your data and submit your own results based on your active participation.

Participants
Dr. Pótó László (POLGABO.PTE)
INFECTIONS AND IMMUNITY

Course director: DR. JÚLIA BARTHÓ-SZEKERES, professor
Department of Medical Biology

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

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

Course headcount limitations (min.-max.): 4 – 50

Prerequisites: OSA-IMM completed + OSP-M1 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
2  Non-specific defence. Surface barriers, normal colonizing flora, phagocytosis, complement system.
   Dr. Barthóné Dr. Szekeres Júlia
3  Antigen presentation and recognition. Dendritic cells, pattern recognition receptors.
   Dr. Barthóné Dr. Szekeres Júlia
4  Antigen presentation and recognition. Dendritic cells, pattern recognition receptors.
   Dr. Barthóné Dr. Szekeres Júlia
5  Defence against extracellular microorganisms. The role of immunoglobulin classes. Mucosal immunity.
   Dr. Barthóné Dr. Szekeres Júlia
6  Defence against extracellular microorganisms. The role of immunoglobulin classes. Mucosal immunity.
   Dr. Barthóné Dr. Szekeres Júlia
7  Defence against intracellular microorganisms. Defence against viral infections. Viruses and immunosuppression.
   Dr. Barthóné Dr. Szekeres Júlia
8  Defence against intracellular microorganisms. Defence against viral infections. Viruses and immunosuppression.
   Dr. Barthóné Dr. Szekeres Júlia
9  Defence against parasitic infections. Micro-and macroparasite infections that polarize the immune response.
   Dr. Barthóné Dr. Szekeres Júlia
10 Defence against parasitic infections. Micro-and macroparasite infections that polarize the immune response.
    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 mimicri, epitope spreading, polyclonal T or B cell activation.
   Dr. Barthóné Dr. Szekeres Júlia

18 Induction of autoimmunity; molecular mimicri, 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 CD4+ T cells.
   Dr. Barthóné Dr. Szekeres Júlia

23 Immunopathological alterations following viral infections. The involvement of antibodies.
   Dr. Barthóné Dr. Szekeres Júlia

24 Immunopathological alterations following viral infections. The involvement of antibodies
   Dr. Barthóné Dr. Szekeres Júlia

25 Vaccination; Type of vaccines, requirements for vaccines.
   Dr. Barthóné Dr. Szekeres Júlia

26 Vaccination; Type of vaccines, requirements for vaccines.
   Dr. Barthóné Dr. Szekeres Júlia

27 Vaccination; rational vaccine development, mandatory vaccines.
   Dr. Barthóné Dr. Szekeres Júlia

28 Vaccination; rational vaccine development, mandatory vaccines.
   Dr. Barthóné Dr. Szekeres Júlia

Practices
Seminars
Exam topics/questions
The same as lecture topics
Participants
OSF-KPR

Chemoprevention

Course director: Dr. Timea Varjas, assistant professor
Department of Public Health Medicine

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

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

Course headcount limitations (min.-max.): 1 – 30

Prerequisites: OSA-MB2 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 practicals (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 Interventing chronic diseases I
   Dr. Szabó István
6 Interventing chronic diseases I
   Dr. Szabó István
7 Interventing chronic diseases II
   Dr. Szabó István
8 Interventing chronic diseases II
   Dr. Szabó István
9 Chemopreventive strategies - antioxidants
   Dr. Szabó István
10 Actualities of antioxidants
   Dr. Szabó István
11 Natural chemopreventive agents
   Dr. Szabó István
12 Natural chemopreventive agents
   Dr. Szabó István
13 Chemopreventive dietary factors  
   Dr. Szabó István

14 Chemopreventive dietary factors  
   Dr. Szabó István

Practices

Seminars

Exam topics/questions

Neptun

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

Topic
The aim of the subject is to help the students to practice the different types of preparations.

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

Mid-term exams
According to Code of Studies and Examinations

Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Shillingburg: Fundamentals of Tooth Preparation

Lectures

Practices
1. Preparation for metal fused ceramic crown on extracted tooth
2. Preparation for metal fused ceramic crown on extracted tooth
3. Preparation for metal fused ceramic crown on extracted tooth
4. Preparation for metal fused ceramic crown on extracted tooth
5. Preparation for metal crown on extracted tooth
6. Preparation for metal crown on extracted tooth
7. Preparation for metal crown on extracted tooth
8. Preparation for metal crown on extracted tooth
9. Preparation for full ceramic crown on extracted tooth
10. Preparation for full ceramic crown on extracted tooth
11. Preparation for full ceramic crown on extracted tooth
12. Preparation for full ceramic crown on extracted tooth
13. Preparation for full ceramic crown on front tooth
14. Preparation for full ceramic crown on front tooth
15. Preparation for full ceramic crown on front tooth
16. Preparation for full ceramic crown on front tooth
17. Preparation for full ceramic crown on premolar tooth
18. Preparation for full ceramic crown on premolar tooth
19. Preparation for full ceramic crown on premolar tooth
20. Preparation for full ceramic crown on premolar tooth
21. Preparation for metal fused ceramic crown on premolar tooth
22. Preparation for metal fused ceramic crown on premolar tooth
23. Preparation for metal fused ceramic crown on premolar tooth
24. Preparation for metal fused ceramic crown on premolar tooth
25. Preparation for metal fused ceramic crown on molar tooth
26. Preparation for metal fused ceramic crown on molar tooth
27. Preparation for metal fused ceramic crown on molar tooth
28. Preparation for metal fused ceramic crown on molar tooth
Seminars

Exam topics/questions
None

Participants
Dr. Benke Beáta (BEBFADO.PTE), Dr. Marada Gyula (MAGFABO.PTE), Dr. Muzsek Zsófia (MUZFACO.PTE)
OSF-MST  MICROSURGICAL TECHNIQUES
Course director:  DR. GÁBOR JANCSÓ, associate professor
Department of Surgical Research and Techniques

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

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

Course headcount limitations (min.-max.): 4 – 6
Prerequisites: OSE-MUA 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 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
Making up for missed classes
http://soki.aok.pte.hu/

Reading material
- Obligatory literature
  - Literature developed by the Department
    http://soki.aok.pte.hu/
- 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  Carotid artery preparation and anastomosis in rat
7  Femoral artery preparation and anastomosis in rat
8  Femoral artery preparation and anastomosis in rat
9  Peripheral nerve reconstruction in rat
10 Peripheral nerve reconstruction in rat
11 Introduction into the microsurgery
12 Microsurgical suture techniques
13 Pitfalls of microvessel anastomoses
14 Injuries and reconstruction of peripheral nerves

Seminars
Exam topics/questions
http://soki.aok.pte.hu/

Participants
dr. Bognár Laura (BOLOAA-O.PTE), Dr. Hardi Péter (HAPFAAO.PTE), Dr. Jancsó Gábor (JAGMAAO.PTE), Dr. Nagy Tibor Aladár (NATIAAO.PTE), Dr. Takács Ildikő (TAIFAAO.PTE)
**OSF-TVT  EXPERIMENTAL PLANNING - EXPLAINED!**

Course director: ÁDÁM FELDMANN, assistant professor

Department of Behavioural Sciences

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

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

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

**Prerequisites:** none

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**Topic**

A good and reasonable experimental plan is crucial for success in the 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**

1. Experimental planning - introduction
2. Basics of experimental planning
3. Experimental planning - randomization
4. Simple methods
5. Complex methods - factorial comparisons 1
6. Complex methods - factorial comparisons 2
7. Case studies 1
8. Case studies 2
9. Cross sectional experiments 1
10. Cross sectional experiments 2
11. Longitudinal studies 1
12. Longitudinal studies 2
13. Meta analyses
14. Exam

**Seminars**

Exam topics/questions

- **Participants**

Feldmann Ádám (FEAFAD.B.JPTE)
OSE-BPL  ORAL IMPLANTOLOGY

Course director: DR. JÓZSEF SZALMA, associate professor
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midsemester grade • Elective 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.): 1 – 50

Prerequisites: OSP-KO2 completed + OSP-SZP completed

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

Topic
The aim of this course is to introduce the basic definitions in relation of dental implantology, based on oral surgical and prosthetic dentistry knowledge.

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

Mid-term exams
- Making up for missed classes
  No possibility.

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

Lectures
1 The history of implantation. Development of implant systems. Different implant systems. Dr. Szalma József
2 Osseo-regeneration. Osseo-integration. Biomaterials. Dr. Szalma József
3 Bone transplantation in oral implantology. Dr. Szalma József
4 Bone substitutive materials. GBR techniques. Dr. Szalma József
5 Indications and contraindications of implantation. Basic pre-diagnostics of implantology. Dr. Szalma József
6 The surgical process of implant insertion. Dr. Szalma József
7 Gingival biological width by implants. Parodontology aspects. Gnatology and biomechanical aspects of implantation. Dr. Szalma József
8 Implant aspects of orthodontics. Dr. Szalma József
9 Implant prothetic and esthetic aspects. Dr. Szalma József
10 Implant systems: Camlog. Dr. Szalma József
11 Implant systems: Replace. Dr. Szalma József
12 Implant systems: Straumann. Dr. Szalma József
13 Peri-implantitis and other failures. Dr. Szalma József
14 Case reports. Dr. Szalma József
Practices
Seminars
Exam topics/questions
-
Participants
OSE-G1F Orthodontics 1 - Practice

Course director: Dr. Geiza Herényi, clinical specialist
Department of Dentistry, Oral and Maxillofacial Surgery

2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 7

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

Course headcount limitations (min.-max.): 1 – 100

Prerequisites: OSA-PF2 completed

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

Topic

Students should be familiar with the etiological factors leading to developmental anomalies, developmental abnormalities and with the medical used devices that are for prevention and treatment.

Conditions for acceptance of the semester

Maximum of 15% absence allowed

Mid-term exams

Attending to practices is mandatory. A maximum of two missings is accepted. There are written tests in week 7 and 14. The Midsemester Grade is calculated from the average of the results of the two tests.

Making up for missed classes

One practice can be made up by joining the other group.

Reading material

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

Lectures

Practices

1. Introduction
2. Introduction
3. Steps of diagnosis making, medical history
4. Steps of diagnosis making, medical history
5. Clinical examination
6. Clinical examination
7. Clinical examination
8. Clinical examination
9. Model analysis
10. Model analysis
11. Model analysis
12. Model analysis
13. Written test
14. Written test
15. Analysing OP images
16. Analysing OP images
17. Analysing OP images
18. Analysing OP images
19. Analysing OP images
20. Cephalometry
21. Cephalometry
22. Cephalometry
23. Cephalometry
24. Cephalometry
25. Cephalometry
26. Cephalometry
Seminars

Exam topics/questions

1. Definition and steps of orthodontic diagnosis
2. Clinical examination
3. Orthodontic model analysis
4. Radiographic procedures in orthodontics
5. Analysing OP images
6. Cephalometric analysis

Participants

Dr. Frank Dorotty (FRDIAO.PTE), Dr. Gurdán Zsuzsanna (GUZFAAO.PTE), Dr. Somoskövi István (SOIFABO.PTE)
**OSE-GST**

**SPECIAL FIELDS OF PHARMACOLOGY**

**Course director:** D. Gábor Pethő, professor

Department of Pharmacology and Pharmacotherapy

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.): 5 – 50

Prerequisites: OSK-GT1 parallel

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

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**Remarks**

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; special aspects of drugs used in urology; 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**

Making up for missed classes

There is no way to make up for missed lectures.

**Reading material**

- Obligatory literature
  - Literature developed by the Department
    - The material of the lectures is available in PDF format in the Neptun.
- Notes
- Recommended literature

**Lectures**

1. Special aspects of use of drugs during pregnancy and lactation  
   Dr. Pethő Gábor

2. Significance of pharmacogenomics in therapy and drug development  
   Dr. Pethő Gábor

3. Use of meta-analysis in evaluation of drugs  
   Dr. Pethő Gábor

4. Drugs and chirality  
   Dr. Pethő Gábor

5. Clinical significance of pharmacodynamic and pharmacokinetic parameters on the example of drugs used in respiratory diseases I  
   Dr. Pethő Gábor

6. Clinical significance of pharmacodynamic and pharmacokinetic parameters on the example of drugs used in respiratory diseases II  
   Dr. Pethő Gábor

7. Pharmacology of retinoids  
   Dr. Pethő Gábor

8. Drugs (other than retinoids) used in dermatology  
   Dr. Pethő Gábor

9. Urological pharmacology I  
   Dr. Pethő Gábor

10. Urological pharmacology II  
    Dr. Pethő Gábor

11. Pharmacology of contrast media  
    Dr. Pethő Gábor

12. Basics of chronopharmacology  
    Dr. Pethő Gábor
Practices

Seminars

Exam topics/questions

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

Participants
OSF-BGF | PATIENT CARE IN EMERGENCY CASES FOR DENTISTRY STUDENTS

Course director: Dr. Ildikó Balás-Szántó, assistant professor
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midsemester grade • Optional subject • both semesters semester • recommended semester: 7

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

Course headcount limitations (min.-max.):
- 3 – 20

Prerequisites:
- OSP-PA2 completed + OSP-SPR completed

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

Topic
Practical course of caring emergency cases

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
  - Lectures and discussions with trainers.
- Notes
- Recommended literature
  - Oxyology handbooks

Lectures

Practices
1 Emergency cases
2 Emergency cases
3 Surgical cases
4 Surgical cases
5 Cardiological patient’s care
6 Cardiological patient’s care
7 Traumatic patient care
8 Traumatic patient care
9 Traumatic patient care
10 Traumatic patient care
11 Emergency care in pediatrics
12 Emergency care in pediatrics
13 Communication in emergency care
14 Communication in emergency care

Seminars
Exam topics/questions
None

Participants
Dr. Ezer Erzsébet (EZEMAAO.PTE), Dr. Verzár Zsófia (VEZHABE.PTE)
OSF-FET - Removable Partial Denture Design

Course director: Dr. Zsófia Muzsék, assistant lecturer
Department of Dentistry, Oral and Maxillofacial Surgery

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 7

Number of hours/semester: 0 lectures + 14 practices + 14 seminars = total of 28 hours
Course headcount limitations (min.-max.): 1 – 5
Prerequisites: OSK-FL2 parallel

Topic
The aim of the seminars is to learn how to build up a well established prosthetic treatment plan. Students learn which factors have to be considered when they choose among the different treatment modalities, how to find the optimal prosthetic treatment for the particular patient. Students can review case presentations. Various types of retainers will be presented.
The aim of the practice is that students can deepen and refresh their knowledge about partial edentulousness, and practice the denture design. Students can practice treatment planning guidelines, principles of design for removable partial dentures.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed
Mid-term exams
Midterm exam
Making up for missed classes
None

Reading material
- Obligatory literature
  Radnai M: Removable Partial Denture, Medicina, 2012
- Literature developed by the Department
  Lecture notes
- Notes
- Recommended literature

Lectures

Practices
1. Classification
2. Treatment plan for cases Fábian-Fejérdy Classification 1A
3. Treatment plan for cases Fábian-Fejérdy Classification 1B
4. Treatment plan for cases Fábian-Fejérdy Classification 2A
5. Treatment plan for cases Fábian-Fejérdy Classification 2B
6. Treatment plan for cases Fábian-Fejérdy Classification 2A/1
7. Treatment plan for cases Fábian-Fejérdy Classification 3
8. Major and minor connectors
9. Type of clasps and precision attachments
10. Practice of denture design
11. Practice of denture design
12. Practice of denture design
13. Practice of denture design
14. Practice of denture design

Seminars
1. Classification
2. Treatment plan for cases Fábian-Fejérdy Classification 1A
3. Treatment plan for cases Fábian-Fejérdy Classification 1B
4. Treatment plan for cases Fábian-Fejérdy Classification 2A
5. Treatment plan for cases Fábian-Fejérdy Classification 2B
6. Treatment plan for cases Fábian-Fejérdy Classification 2A/1
7. Treatment plan for cases Fábian-Fejérdy Classification 3
8. Major and minor connectors
9. Type of clasps and precision attachments
10. Practice of denture design
11. Practice of denture design
12. Practice of denture design
13. Practice of denture design
14. Practice of denture design

Exam topics/questions

Participants

Dr. Muzsek Zsófia (MUZFACO.PTE)
**OSF-FFO**

**DENTAL PHOTOGRAPHY**

Course director: Dr. Iván MANDEL, clinical specialist

Department of Dentistry, Oral and Maxillofacial Surgery

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<th>2 credit</th>
<th>midsemester grade</th>
<th>Optional subject</th>
<th>autumn semester</th>
<th>recommended semester: 7</th>
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**Number of hours/semester:**

- 14 lectures
- 14 practices
- 0 seminars

**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**

Photographic documentation of patients is crucial for proper treatment planning and follow up of cases. It is also necessary for publication. The course summarizes the theoretical background of photography and gives a detailed overview of the dental photographic equipment and methods. All the settings, tips and tricks are discussed, that are necessary for the dental practitioner.

**Conditions for acceptance of the semester**

- Maximum of 15% absence allowed

**Mid-term exams**

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

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  - Wolfgang Bengel: Mastering Digital Dental Photography

**Lectures**

1. Photography terminology I
   - Dr. Mandel Iván
2. Photography terminology II
   - Dr. Mandel Iván
3. Camera basics: which should I choose? DSLR cameras
   - Dr. Mandel Iván
4. Accessories of dental photography
   - Dr. Mandel Iván
5. Extraoral photography I
   - Dr. Somoskövi István
6. Extraoral photography II
   - Dr. Mandel Iván
7. Intraoral photography I
   - Dr. Mandel Iván
8. Intraoral photography II
   - Dr. Mandel Iván
9. Intraoral photography III
   - Dr. Mandel Iván
10. Photography of small objects
    - Dr. Mandel Iván
11. Photo and video shooting with a dental surgical microscope
    - Dr. Mandel Iván
12. Common mistakes and solutions
    - Dr. Mandel Iván
13. Picture processing
    - Dr. Mandel Iván
14. Legal aspects of dental photography
    - Dr. Mandel Iván
Practices
1. types of cameras
2. main camera controls and settings
3. additional equipment for dental photography
4. flashlights
5. extraoral photography in orthodontics
6. extraoral photography for smile designing
7. standard intraoral photographs I.
8. standard intraoral photographs II.
9. special cases of intraoral photography
10. equipment for object photography
11. object photography
12. fundamentals of image processing
13. image processing
14. special cases of image processing

Seminars

Exam topics/questions

Participants
Dr. Mandel Iván (MAIFABO.PTE), Dr. Somoskövi István (SOIFABO.PTE)
OSF-FMA  DATA ANALYSIS 1
Course director: Dr. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 7
Number of hours/semester: 7 lectures + 7 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 1 – 12  Prerequisites: none

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. Prepare and submit your own study plan based on your active participation.

Mid-term exams
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.
   Dr. Pótó László
7  The complete study plan.
   Dr. Pótó László
Practices

1. Introduction. Overview of some sample papers.
2. The goal of your study - processing a few papers brought and presented by students.
3. Setting the study hypotheses. Further analysis of the papers.
4. Which data should you collect and how to do that.
5. Finalize the plan of your data collection.
6. Make a plan of the data processing.
7. Create, present and discuss of your study plan.

Seminars

Exam topics/questions

Preparation of the study plan

Participants

Dr. Pőtó László (POLGABO.PTE)
OSF-FPH  DENTAL PHOTOGRAPHY

Course director: DR. IVÁN MANDEL, clinical specialist
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midsemester 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.): 1 – 10  Prerequisites: none

Topic
Photographic documentation of patients is crucial for proper treatment planning and follow up of cases. It is also necessary for publication. The course summarizes the theoretical background of photography and gives a detailed overview of the dental photographic equipment and methods. All the settings, tips and tricks are discussed, that are necessary for the dental practitioner.

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

Mid-term exams

Making up for missed classes
Not possible

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Wolfgang Bengel: Mastering Digital Dental Photography

Lectures
1  Photography terminology I
   Dr. Mandel Iván
2  Photography terminology II
   Dr. Mandel Iván
3  Camera basics: which should I choose? DSLR cameras
   Dr. Mandel Iván
4  Accessories of dental photography
   Dr. Mandel Iván
5  Extraoral photography I
   Dr. Somoskövi István
6  Extraoral photography II.
   Dr. Mandel Iván
7  Intraoral photography I
   Dr. Mandel Iván
8  Intraoral photography II
   Dr. Mandel Iván
9  Intraoral photography III
   Dr. Mandel Iván
10 Photography of small objects
    Dr. Mandel Iván
11 Photo and video shooting with a dental surgical microscope
    Dr. Mandel Iván
12 Common mistakes and solutions
    Dr. Mandel Iván
13 Picture processing
    Dr. Mandel Iván
14 Legal aspects of dental photography
    Dr. Mandel Iván
Practices
Seminars
Exam topics/questions

Participants
OSF-ORD  ORAL DIAGNOSTICS

Course director: DR. Ákos NAGY, associate professor
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 7
Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Course headcount limitations (min.-max.): 2 – 25
Prerequisites: OSP-OFO completed + OSP-FPP completed

Topic
The subject collects the oral diagnostic methods. Competences: dental examination and anamnesis, make an exact dental diagnosis.

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

Mid-term exams
Making up for missed classes
Not possible

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

Lectures
Practices
Seminars
1 Diagnostic procedure in dentistry
2 Dental anamnesis
3 Clinical examination I
4 Clinical examination II
5 Radiological and other diagnostic methods
6 Salivary glands diagnostic
7 Systhemic diseases and their importance in dentistry I
8 Systhemic diseases and their importance in dentistry II
9 Treatment plan
10 Documentation in the dental office
11 Oral symptoms with psychiatric background
12 Oral soft-tissue lesions and ulcers I
13 Oral soft-tissue lesions and ulcers II
14 Exam

Exam topics/questions
N/A

Participants
Dr. Frank Dorottya (FRDIAAO.PTE), Dr. Mandel Iván (MAIFABO.PTE), Dr. Nagy Ákos (NAARADP.PTE)
OSF-PPR  PERIODONTOLOGY PROPEDEUTICS

Course director: DR. ÁGNES BÁN, assistant professor
Department of Dentistry, Oral and Maxillofacial Surgery

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 7
Number of hours/semester: 14 lectures + 14 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 1 – 25
Prerequisites: OSA-PF2 completed

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

Topic
Theoretical and practical introduction to periodontology, focusing on patient examination and oral hygiene treatments. Premedication, examination and documentation of periodontal patients, basic periodontal armamentarium and treatment modalities.

Conditions for acceptance of the semester
According to the Code of Studies and Examinations, Annex 2., Section 1/A (6):
Who is absent from more than 15% of the practical courses or more than 15% of the lectures cannot be granted entry to examination.
Being late for more than 10 minutes from the practical courses or leaving it without the permission of the leader of the practice is considered as an absence.

According to the Code of Studies and Examinations, Annex 2., Section 4. (6):
The leader of the practice shall have the right to exclude a student from bedside practice (class) in the case of any unpreparedness endangering the health of the patient. Exclusion from the given practice shall qualify as absence without a certified excuse.

Mid-term exams
Making up for missed classes
Not possible

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Jan Lindhe: Clinical Periodontology and Implant Dentistry

Lectures
1. The subject of periodontology, periodontal diseases
   Dr. Mandel Iván
2. Anatomy and physiology of the periodontium
   Dr. Mandel Iván
3. Dental plaque and calculus
   Dr. Mandel Iván
4. Mechanical and chemical plaque control
   Dr. Mandel Iván
5. Power-driven instruments in periodontology I
   Dr. Mandel Iván
6. Power-driven instruments in periodontology II
   Dr. Mandel Iván
7. Hand instruments in periodontology I
   Dr. Mandel Iván
8. Hand instruments in periodontology II
   Dr. Mandel Iván
9. Ergonomics, treatment positions
   Dr. Mandel Iván
10. Patient examination (medical history, documentation, premedication)
    Dr. Mandel Iván
11. Patient examination (periodontal charts, indices)
    Dr. Mandel Iván
12 Epidemiology of periodontal diseases  
   Dr. Mandel Iván  
13 Polishing, root planning  
   Dr. Mandel Iván  
14 Consultation  
   Dr. Mandel Iván  

Practices  
1 Practice in the preclinical lab  
2 Practice in the preclinical lab  
3 Practice in the preclinical lab  
4 Practice in the preclinical lab  
5 Practice in the preclinical lab  
6 Practice in the preclinical lab  
7 Practice in the preclinical lab  
8 Practice in the preclinical lab  
9 Practice in the preclinical lab  
10 Practice in the preclinical lab  
11 Practice in the preclinical lab  
12 Patient examination practice  
13 Patient examination practice  
14 Patient examination practice  

Seminars  

Exam topics/questions  

Participants  

Dr. Mandel Iván (MAIFABO.PTE)
PAIN AND ANALGESICS
Course director: DR. GÁBOR PETHŐ, professor
Department of Pharmacology and Pharmacotherapy

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: OSK-GT1 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
Making up for missed classes
There is no way to make up for missed lectures.

Reading material
- Obligatory literature
  - Literature developed by the Department
    The material of the lectures is available in PDF format in the Neptun.
- Notes
- Recommended literature

Lectures
1. Basic terms related to pain and nociceptors
   Dr. Pethő Gábor
2. Features of capsaicin-sensitive nociceptors
   Dr. Pethő Gábor
3. Peripheral mechanisms of hyperalgesia
   Dr. Pethő Gábor
4. Central mechanisms of hyperalgesia and allodynia
   Dr. Pethő Gábor
5. Features of neuropathic pain
   Dr. Pethő Gábor
6. Pharmacology of opioid analgesics I
   Dr. Pethő Gábor
7. Pharmacology of opioid analgesics II
   Dr. Pethő Gábor
8. Pharmacology of non-steroidal antiinflammatory analgesic drugs II
   Dr. Pethő Gábor
9. Pharmacology of non-steroidal antiinflammatory analgesic drugs II
   Dr. Pethő Gábor
10. Adjuvant analgesics
    Dr. Pethő Gábor
11. New targets for development of analgesics I
    Dr. Pethő Gábor
12. New targets for development of analgesics II
    Dr. Pethő Gábor
Practices
Seminars
Exam topics/questions
No exam questions are given. The essay questions of the written exam are based on the material presented.
Participants
**OSE-G2F Orthodontics 2 - Practice**

**Course director:** DR. ZSUZSANNA GURDÁN, assistant lecturer
Department of Dentistry, Oral and Maxillofacial Surgery

<table>
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<tr>
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<th>Credit</th>
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<td>orthodontics</td>
<td>practices</td>
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**Number of hours/semester:**
0 lectures + 28 practices + 0 seminars = total of 28 hours

**Course headcount limitations (min.-max.):**
1 – 100

**Prerequisites:**
OSE-G1F completed

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

**Topic**

The aim of this subject is that graduate students can acquire the knowledge regarding the aetiological factors and characteristics of orthodontic anomalies as well as possible treatment strategies. This is necessary for general dental practitioners to be able to recognise orthodontic problems and to take part in interdisciplinary collaboration.

**Conditions for acceptance of the semester**

Maximum of 15% absence allowed

**Mid-term exams**

There are written tests in week 7 and 14. The Midsemester Grade is calculated from the average of the results of the two tests.

**Making up for missed classes**

One practice can be made up by joining the other group.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Practice material**
- **Notes**

**Recommended literature**

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>Introduction</td>
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<tr>
<td>3</td>
<td>Seminar: repetition</td>
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<tr>
<td>4</td>
<td>Seminar: ergonomics, documentation, communication</td>
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<td>5</td>
<td>Taking impressions and photos</td>
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<td>Taking impressions and photos</td>
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<tr>
<td>25</td>
<td>Seminar: discussion of diagnostic steps</td>
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<tr>
<td>26</td>
<td>Seminar: discussion of diagnostic steps</td>
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<tr>
<td>27</td>
<td>Written test</td>
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<tr>
<td>28</td>
<td>Written test</td>
</tr>
</tbody>
</table>
Seminars

Exam topics/questions

1. Definition and steps of orthodontic diagnosis
2. Clinical examination
3. Orthodontic model analysis
4. Radiographic procedures in orthodontics
5. Analysing OP images
6. Cephalometric analysis
7. Ergonomics, documentation, communication

Participants

Dr. Frank Dorottya (FRDIAO.PTE), Dr. Gurdán Zsuzsanna (GUZFAO.PTE), Dr. Somoskövi István (SOIFABO.PTE)
OSF-BGG  PATIENT CARE IN EMERGENCY CASES FOR DENTISTRY STUDENTS 2

Course director: DR. ILDIKÓ BALÁS-SZÁNTÓ, assistant professor
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 8
Number of hours/semester:
- 0 lectures + 14 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.):  3 – 20
Prerequisites: OSP-PA2 completed + OSP-SPR completed

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

Topic
Practical course of caring emergency cases

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
  Lectures and discussions with trainers.
- Notes
- Recommended literature
  Oxyology handbooks

Lectures
Practices
1 Emergency cases
2 Emergency cases
3 Surgical cases
4 Surgical cases
5 Cardiological patient’s care
6 Cardiological patient’s care
7 Traumatic patient care
8 Traumatic patient care
9 Traumatic patient care
10 Traumatic patient care
11 Emergency care in pediatrics
12 Emergency care in pediatrics
13 Communication in emergency care
14 Communication in emergency care

Seminars
Exam topics/questions
None

Participants
Dr. Ezer Erzsébet (EZEMAAO.PTE), Dr. Verzár Zsófia (VEZHABE.PTE)
### OSF-FLA Dental Laser Applications

**Course director:** Dr. Iván Mandel, clinical specialist

<table>
<thead>
<tr>
<th>Department of Dentistry, Oral and Maxillofacial Surgery</th>
</tr>
</thead>
</table>

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 8

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

**Course headcount limitations (min.-max.):** 1 – 10

**Prerequisites:** OSF-PPR completed + OSK-SZ1 completed + OSK-OPF- completed

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**Topic**

The use of lasers has become an integral part of modern dentistry. This course aims to give a comprehensive overview on the different types of laser devices used in dentistry, their clinical usability and efficacy.

**Conditions for acceptance of the semester**

Maximum of 15% absence allowed

**Mid-term exams**

No

**Making up for missed classes**

Not possible

**Reading material**

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

**Lectures**

1. History of lasers and dental laser applications  
   Dr. Mandel Iván
2. Laser fundamentals  
   Dr. Mandel Iván
3. Laser-tissue interactions  
   Dr. Mandel Iván
4. Low level laser therapy (LLLT)  
   Dr. Mandel Iván
5. Photo-activated disinfection  
   Dr. Mandel Iván
6. High-performance laser applications  
   Dr. Mandel Iván
7. Lasers in non-surgical periodontal therapy  
   Dr. Mandel Iván
8. Lasers in surgical periodontal therapy  
   Dr. Mandel Iván
9. Lasers in cariology and endodontics  
   Dr. Mandel Iván
10. Lasers in pediatric dentistry and orthodontics  
    Dr. Mandel Iván
11. Lasers in oral surgery  
    Dr. Mandel Iván
12. Practical application of a high performance diode laser device I.  
    Dr. Mandel Iván
13. Practical application of a high performance diode laser device II.  
    Dr. Mandel Iván
14. Consultation  
    Dr. Mandel Iván
Practices
Seminars
Exam topics/questions

Participants
## OSF-GTH  Gene Therapy

<table>
<thead>
<tr>
<th>Course director:</th>
<th>Gene Therapy</th>
<th>DR. GÉZA SÁFRÁNY, visiting professor</th>
</tr>
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<table>
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<tr>
<th>1 credit •</th>
<th>Optional subject •</th>
<th>spring semester •</th>
<th>recommended semester: 8</th>
</tr>
</thead>
</table>

### Number of hours/semester:

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

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.genetherapynet.com/clinicaltrialsgov.html](http://www.genetherapynet.com/clinicaltrialsgov.html)
- [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. Miseta Attila
4. Gene therapy of HIV  
   Dr. Sáfrány Géza
5. Application of dendritic cells in gene therapy  
   Dr. Sáfrány Géza
6. Gene directed enzyme pro-drug therapy of malignant diseases  
   Dr. Sáfrány Géza
7. Immune therapy of malignant diseases  
   Dr. Sáfrány Géza
8 Radiation-driven gene therapy of malignant disease  
   Dr. Sáfrány Géza
9 Stem cells in gene therapy  
   Dr. Sáfrány Géza
10 Treatment of immune-deficiencies with gene therapy  
   Dr. Sáfrány Géza
11 Gene therapy of ischemic diseases  
   Dr. Sáfrány Géza
12 Gene therapy of cystic fibrosis  
   Dr. Miseta Attila
13 Gene therapy of thalassemia  
   Dr. Sáfrány Géza
14 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.
Participants
### OSF-OKD Occlusal Diagnostics

**Course director:**

**DR. ISTVÁN SOMOSK-ÖVI, assistant lecturer**  
Department of Dentistry, Oral and Maxillofacial Surgery

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8

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

**Course headcount limitations (min.-max.):** 3 – 10

**Prerequisites:** OSP-GNA completed

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

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**Topic**

Precise examination of occlusal contacts is an important task for every dentist. The aim of this subject is to help graduate students improving their skills in analysing occlusion and have the ability to incorporate this in the process of treatment plan making. Practice will involve examination of patients and analysis of study models mounted in articulator after facebow bite transfer.

**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
  
  Peter E. Dawson: Functional Occlusion - From TMJ to Smile Design, Mosby Elsevier

**Lectures**

**Practices**

1 Introduction, terminology, instrumentation  
2 Examining patients and study models  
3 Examining patients and study models  
4 Bite registration techniques  
5 Facebow transfer  
6 Mounting study models in articulator  
7 Mounting study models in articulator  
8 Occlusal analysis of mounted casts  
9 Occlusal analysis of mounted casts  
10 Occlusal analysis of mounted casts  
11 Occlusal analysis of mounted casts  
12 Occlusal analysis of mounted casts  
13 Practice exam  
14 Practicing, discussion

**Seminars**

**Exam topics/questions**

-  

**Participants**

Dr. Somoskővi István (SOIFABO.PTE)
OSF-SUB

RADIATION BIOLOGY

Course director: DR. GÉZA SÁFRÁNY, visiting professor
Institute of Laboratory Medicine

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8

Number of hours/semester: 14 lectures + 0 practices + 14 seminars = total of 28 hours
Course headcount limitations (min.-max.): 3 – 15 Prerequisites: none

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

Topic

The course will focus on the better understanding of radiation effects on the whole organisms, tissues and cells, as well as on the cellular causes leading to the death of normal and malignant cells. This helps to understand why a given dose of radiation induces tumors in one case while destroys tumor cells in another case. On the basis of radiobiological knowledge one can develop new therapeutic modalities to improve the survival of cancer patients. Radiation biology helps us to understand how and why ionizing radiation can be used to examine healthy and pathological cell structures and to diagnose and treat various diseases.

The aim of radiation therapy is to kill tumor cells without seriously damaging normal tissues. The death of normal cells leading to the development of early and late normal tissue sequelae 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://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. Sáfrány Géza

The radiobiological background of fractionated radiotherapy, the importance and application of the linear-quadratic approach in tumor treatment.
Dr. Sáfrány Géza

The role of treatment duration, total and fraction dose in radiotherapy.
Dr. Sáfrány Géza

Radiobiological principles of low and high-dose rate brachytherapy.
Dr. Sáfrány Géza

Combined chemo- and radiotherapy.
Dr. Sáfrány Géza

Dr. Sáfrány Géza

Risks of occupational exposure to radiation: dose limit in radiation protection.
Dr. Sáfrány Géza

Doses and risks in nuclear medicine: diagnostic applications
Dr. Bódisné Dr. Zámbo Katalin

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. Scientific protocols applied in radiobiology.
12. Targeted and individual tumor therapy, estimating radiosensitivity, predictive assays.

Exam topics/questions

Multiple choice test for checking the acquisition of course material is given at the end of semester. Questions include material discussed in lectures and seminars. It is important to know that part of the material cannot be found in textbooks.

Participants

Dr. Bódisné Dr. Zámbo Katalin (BOZMAAO.PTE), Dr. Sáfrány Géza (SAGRAAO.PTE)
Tropical Medicine

Course director: DR. ZOLTÁN PÉTERFI, associate professor
1st Department of Internal Medicine

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8

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

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 threaten the patient’s life.

The course involves travel medicine issues as well.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

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

1 Preparing for travel
   Dr. Feiszt Zsófia
2 Preparing for travel
   Dr. Feiszt Zsófia
3 Most common imported tropical diseases
   Dr. Feiszt Zsófia
4 Viral hemorrhagic fevers
   Dr. Feiszt Zsófia
5 Tropical bacterial infections (Typhoid fever, Cholera, Pest, Bartonellosis)
   Dr. Feiszt Zsófia
6 Tropical bacterial infections (Typhoid fever, Cholera, Pest, Bartonellosis)
   Dr. Feiszt Zsófia
7 Leprosy and other Mycobacterial infections
   Dr. Feiszt Zsófia
8 Leishmaniasis
   Dr. Feiszt Zsófia
9 Schistosomiasis
   Dr. Feiszt Zsófia
10 African and American Trypanosomiasis
   Dr. Feiszt Zsófia
11 Non-veneral Treponema infections
   Dr. Feiszt Zsófia
12 HIV/AIDS
   Dr. Feiszt Zsófia
13 Non-infectious tropical diseases
   Dr. Feiszt Zsófia
14 Malnutrition

Dr. Feiszt Zsófia

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

Participants
**OSE-EFG**  
**Esthetic Dentistry - practices**

**Course director:** Dr. Edina LEMPEL, assistant professor  
Department of Dentistry, Oral and Maxillofacial Surgery

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

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

**Course headcount limitations (min.-max.):** 2 – 10  
**Prerequisites:** OSK-FL3 completed + OSK-KF1 parallel

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

**Topic**

The aim of this course is to introduce the esthetic dentistry for dental students. During the course the students has possibility to learn modern and conventional techniques in practice.

**Conditions for acceptance of the semester**

Maximum of 15% absence allowed

**Mid-term exams**

The students skills are qualified according to the practical work.

**Making up for missed classes**

None

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  
  Ronald E. Goldstein: Esthetics in Dentistry, 2nd edition

**Lectures**

**Practices**

1 Smile design in practice  
2 Ceramic layering in practice I  
3 Ceramic layering in practice II  
4 Indirect ceramic veneer preparation  
5 Direct composite veneer in practice  
6 Making of composite filling in molar region  
7 Inlay, onlay preparation  
8 Examination of color perception  
9 Tooth color matching in practice  
10 Photo taking in practice  
11 Photo taking in practice about cast and dentures  
12 Diagnostic wax-up and trial denture  
13 Drilling and rapid prototyping in practice  
14 Documentation in practice

**Seminars**

**Exam topics/questions**

No exam

**Participants**

Dr. Lempel Edina (LEEFABO.PTE), Dr. Marada Gyula (MAGFABO.PTE)
**OSE-G3F  ORTHODONTICS 3 - PRACTICE**

**Course director:** DR. ISTVÁN SOMOSK-ÖVI, assistant lecturer
Department of Dentistry, Oral and Maxillofacial Surgery

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

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

**Course headcount limitations (min.-max.):** 1 – 100  

**Prerequisites:** OSE-G2F completed

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

**Topic**

The aim of this subject is that graduate students can acquire the knowledge regarding the aetiological factors and characteristics of orthodontic anomalies as well as possible treatment strategies. This is necessary for general dental practitioners to be able to recognise orthodontic problems and to take part in interdisciplinary collaboration.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

There are written tests in week 7 and 14. The midsemester grade is calculated from the average of the results of the two tests.

**Making up for missed classes**

One practice can be made up by joining the other group.

**Reading material**

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

**Lectures**

**Practices**

1. Repetition  
2. Repetition  
3. Patient examination  
4. Patient examination  
5. Patient examination  
6. Patient examination  
7. Patient examination  
8. Patient examination  
9. Patient examination  
10. Patient examination  
11. Patient examination  
12. Patient examination  
13. Test  
14. Test  
15. Patient examination  
16. Patient examination  
17. Patient examination  
18. Patient examination  
19. Patient examination  
20. Patient examination  
21. Patient examination  
22. Patient examination  
23. Patient examination  
24. Patient examination  
25. Patient examination  
26. Patient examination
Seminars

Exam topics/questions

1. Definition and steps of orthodontic diagnosis
2. Clinical examination
3. Orthodontic model analysis
4. Radiographic procedures in orthodontics
5. Analysing OP images
6. Cephalometric analysis

Participants

Dr. Frank Dorottya (FRDIAO.PTE), Dr. Gurdán Zsuzsanna (GUZFAAO.PTE), Dr. Somoskövi István (SOIFABO.PTE)
OSF-SUO  Emergency Medicine

Course director:  DR. ZSÓFIA VERZÁR, associate professor
Department of Emergency Medicine

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 9

Number of hours/semester:  14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.):  5 – 150  Prerequisites:  OSK-BE2 completed

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

Topic
It is a basic requirement to initialize the aspect of proper emergency care for those who do not take part in emergency medicine. The aim is getting closer to the purpose of care, decrease of avoidable death rates, prevention of organ failure, avoidance of disability, relief of suffering and pain.

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  Patient examination according to ABCDE
   Dr. Gaál Ildikó
2  Resuscitacion
   BLS, ALS, EPLS
   Dr. Gaál Ildikó
3  Cardiovascular diseases
   Dr. Verzár Zsófia
4  Cardiovascular diseases
   Dr. Verzár Zsófia
5  Differential diagnosis of limb pain
   Dr. Bóna Ernő
6  Pediatric emergency care
   Dr. Bóna Ernő
7  Toxicology
   Environmental diseases
   Dr. Varga Szilárd
8  Toxicology
   Environmental diseases
   Dr. Varga Szilárd
9  Emergency care in neurology
   Dr. Bóna Ernő
10 Acut psychiatric disorders
    Dr. Bóna Ernő
11 Trauma care (ETC), Burns
    Dr. Gaál Ildikó
12 Trauma care (ETC), Burns
    Dr. Gaál Ildikó
13  Acute abdomen, Abdominal pain  
   Dr. Verzár Zsófia
14  Acute abdomen, Abdominal pain  
   Dr. Verzár Zsófia

Practices

Seminars

Exam topics/questions

Website of Emergency Medicine, University of Pécs.

Participants