

COURSE SYLLABUS

<p style="text-align: center;">Semmelweis University Faculty of Dentistry, Dentistry</p>
<p>Name of the course: General and oral pathophysiology</p> <p>Credit value: 3</p> <p>Lessons (<i>in hours in the whole semester</i>): 4 from this, lectures: 2 practicals: 2</p> <p>Type of the course: compulsory</p> <p>Semester in which it is announced according to the curriculum: 5th semester</p> <p>Frequency of announcement (<i>per semester or year</i>): yearly</p> <p>The responsible educational and research organizational unit for teaching the subject: Department of Oral Biology</p>
<p>Academic year: 2023/24 (1st semester)</p>
<p>Subject (Neptun) code: FOKOBT241_1A</p>
<p>Lecturer of the course: Dr. Zsembery Ákos Academic position: associate professor Contact: Orálbiológiai Tanszék, +36-1-210-4415</p>
<p>The goals and place of the course in regards to the education of dental students: General and oral pathophysiology is a preclinical subject performed at the fifth semester of the Faculty of Dentistry. Anatomy, biochemistry and physiology are preceding the teaching of this subject, pathology and microbiology are presented at the same semester and the education in clinical subjects both in general medicine and dentistry, are following it. It is closely connected to the above mentioned basic subjects, so it forms a bridge between basic subjects and clinical topics. Both the clinical subjects in general medicine and dentistry, make use of the pathophysiological basis. The object of pathophysiology is to discuss the pathological regulatory mechanisms, to show the specific aspects and logic in pathophysiology and to build up a strong basis for the clinical subjects.</p>
<p>Location of the course (<i>address of lecture hall, seminar room etc.</i>): NET Building according to the semesters's schedule</p>
<p>Competences acquired by completion of the course: Upon completion of the program, students would be able to understand the mechanisms involved in the most common clinical disorders and to apply and evaluate routine diagnostic methods connected to them.</p>
<p>Pre-study requirements and prerequisites of course registration and completion: General and Oral Microbiology, Molecular Cell Biology II, Medical and Dental Physiology II</p>
<p>Number of students required for announcement of course (<i>min., max.</i>), method of selection: N/A</p>
<p>Method of course registration: Neptun system</p>
<p>Detailed course/lecture description¹:</p> <p><i>Lecture and practical topics:</i></p> <p>1. Pathophysiology of ischemic heart disease and arrhythmias. ECG I. basics, analysis</p>

2. Causes and consequences of hypertension, effects of long-lasting antihypertensive therapy, atherosclerosis ECG II. Impulse formation and conduction abnormalities
3. Acute and chronic heart failure ECG III. Ischemic heart disease on ECG
4. Pathophysiology of circulatory shock. Cardiology case presentation/discussion
5. Acute and chronic kidney failures. Salt-water and acid-base homeostasis
6. Pathophysiology of respiratory diseases Urine test and renal function
7. Diseases of the esophagus and the stomach. Investigation methods in the GI tract
8. Acute and chronic disturbance of liver functions and bile secretion. Liver function tests
9. Intestinal and pancreatic disorders Gastroenterology case presentation/discussion
10. Endocrine disorders Endocrine lab diagnostics I.
11. Disorders of energy balance Endocrine lab diagnostics II.
12. Diabetes mellitus (pathophysiology, classification) Neuropsychiatric diseases, pathophysiology, symptoms, diagnostics
13. Symptoms and consequences of diabetes mellitus Diabetology case presentation/discussion
14. Pathophysiology of pain. Pain relief methods Autoimmune diseases, laboratory diagnostics

Courses (*compulsory and obligatory elective*) which in part or entirely overlap the topics of above course: Dental Biochemistry, Molecular Cell Biology, Medical and Dental Physiology, Pathology, Oral Biology, Pharmacology, courses of the clinical module

Special academic work required for completion of the course²:

N/A

Attendance on practices and lectures, replacement in case of missed sessions: according to the Study and Examination Regulations. Replacement of missed practical session only possible on the parallel group's sessions of the same topic. Lecture material is made available on the Moodle.

Consequences of absence from sessions and exams: törölve

Method of checking acquired knowledge during the study period³:

Midterm exam on the 12th week qualifies to participate on the study competition on the 14th week. Exam privileges of three different levels can be earned at the competition.

Requirements of an accepted semester (*signature of the lecturer*): according to the Study and Examination Regulations

Type of the exam: semifinal, oral

Requirements of the exam³:

Topic list:

- A1. Hypertension (definition, etiology, pathomechanisms, classification, consequences/complications)
- A2. Atherosclerosis (pathophysiology, consequences/complications)
- A3. Pathophysiology of ischemic heart disease
- A4. Pathophysiology of arrhythmias
- A5. Acute and chronic heart failure (pathophysiology, consequences/complications)
- A6. Circulatory shock (types, pathomechanism, organ damages in shock)
- A7. Pulmonary edema and pulmonary embolism
- A8. Obstructive and restrictive pulmonary diseases
- A9. Acute renal failure
- A10. Chronic renal failure
- A11. Diseases of the stomach and the H. pylori infection
- A12. Diseases of the oesophagus and the GERD
- A13. Bowel diseases
- A14. Diseases of the pancreas
- A15. Liver diseases and bile disorders
- A16. Thyroid diseases

- A17. Diseases of the adrenal gland
- A18. Pituitary dysfunctions
- A19. Pathomechanism and symptoms of diabetes mellitus
- A20. Complications of diabetes mellitus. Metabolic syndrome (X)
- A21. The anomalies of energy homeostasis. Causes of obesity and starvation
- A22. Pathophysiology of pain. Pain relief methods

- B1. Laboratory tests of the acid-base homeostasis (metabolic/respiratory acidosis and alkalosis)
- B2. Laboratory tests of the kidney and urine
- B3. Abnormalities and laboratory diagnostics of the salt-water homeostasis
- B4. Diagnostic tests of the gastrointestinal tract
- B5. Diagnostic tests of viral hepatitis
- B6. Laboratory diagnostics of the liver
- B7. Diagnostic tests of the thyroid
- B8. Diagnostic tests of the adrenal gland
- B9. Laboratory tests of pituitary gland
- B10. Laboratory diagnostics of diabetes mellitus
- B11. Diagnostics of autoimmune diseases (rheumatoid arthritis, SLE, inflammatory bowel diseases, Sjögren's-syndrome)
- B12. Neurological disorders (causes, symptoms, diagnostics)
- B13. Psychiatric disorders (causes, symptoms, diagnostics)
- B14. ECG and analysis basics
- B15. Abnormal ECG: excitation and conduction abnormalities
- B16. Abnormal ECG: ischemia on ECG

Oral presentation of 3 topics (2 A topics and 1 B topic). All topics should be passed for the successful completion of the exam.

On the study competition the following privileges may be earned:

- I. exemption from answering two topics of the student's choice. The topics will be accepted with mark 5.
- II. exemption from answering one topic of of the student's choice. The topic will be accepted with mark 5.
- III. exemption from answering one topic of the examiner's choice. The topic will be accepted with mark 5.

Grading of courses⁴. according to the result of the oral exam.

Exam registration:

in the Neptun system, according to the Study and Examination Regulations

Rules of repeating exams:

according to the Study and Examination Regulations

List of textbooks, lecture notes and recommended textbooks, online material:

Simon, Tornóczy: ECG workbook, Semmelweis Kiadó, 2015

Silbernagl, Lang: Color atlas of pathophysiology, Thieme V., Stuttgart, New York, 2000

Porth CM & Matfin G: Pathophysiology - Concepts of altered health states, 8th ed, Lippincott Williams & Wilkins, 2009

Nagy, Ákos (editor) Digital method and content development of the Hungarian higher education in dentistry in Hungarian, German and English. Budapest, Magyarország : Dialóg Campus Kiadó, Nordex Kft. (2014) <http://dtk.tankonyvtar.hu/xmlui/handle/123456789/12092>

Lecture and practical materials available online in the Moodle.

Signature of course lecturer:

Signature of head of department:
Date of submission:
Opinion of OKB:
Notes from the Dean's Office:
Signature of Dean:

¹ Detailed and numbered for each week of theoretical and practical lessons one by one. In an annex, cannot be attached appendix!

² Eg. homework, report, midterm exam etc. Topics, dates, method of retake and replacement

³ List of topics in case of theoretical exam, thematic and method in case of practical exam

⁴ Method of inclusion of theoretical and practical exams. Method of inclusion of midterm assessments.