

# The University of Pécs Medical School

## DENTISTRY Major

### STUDY PROGRAM 2010/2011

Subjects of the  
Preclinical module  
(obligatory subjects)

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## **OSPFPP PROSTHODONTICS: BASICS**

Course director:

**DR. GYULA SZABÓ**, professor  
Dept. of Dentistry, Oral-, Maxillofacial Surgery

**3 credit - semester exam - Pre-clinical module - autumn semester - recommended semester: 5**

*Number of hours/semester:* **28 lectures + 14 practices + 0 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **2 – 24**

*Prerequisites:* **see in the recommended curricula!**

### *Topic*

The aim of this course is to inform students about clinical and technological aspects of fixed and removable partial dentures.

### *Conditions for acceptance of the semester*

Based on the Code of Studies and Examinations.

Successful passing of all practical requirements is essential for signature for the semester

### *Making up for missed classes*

None.

### *Reading material*

#### *Lectures*

1. Principles of removable partial dentures fabrication.
2. Stone cast fabrication and the importance of prosthetic equator.
3. Treatment plan and design of clasp-retained dentures
4. Establishment of occlusal relations
5. Retention of denture bases. Design of retaining elements
6. The odontotechnology of clasps
7. Preliminary arrangement of artificial teeth
8. Clinical requirements of trial denture
9. Flasking and processing of dentures
10. Clinical aspects of RPD insertion
11. Principles of complete denture fabrication
12. Anatomic and functional impression
13. CR recording and trial denture fabrication
14. Repairs and additions of dentures
15. Biomechanical principles of crown preparation
16. Odontotechnology of crowns
17. Working casts and dies
18. Casting of crowns and the casting armamentarium
19. Metal-ceramic crowns, preparation of metal-ceramic crowns
20. Odontotechnology of ceramic layer on porcelain-fused-to-metal restorations
21. Types of jacket crowns. Full ceramic crown preparation
22. Odontotechnology of full ceramic restorations
23. Fixed prosthodontics for devitalised teeth
24. Odontotechnology of dovetail core
25. Biomechanics of bridges
26. Odontotechnology of bridges
27. Consultation
28. Consultation

#### *Practices*

1. Impression taking for RPD, design of clasp-retained dentures
2. Making of record base and occlusion rims
3. Recording of CR and mounting on articulator
4. Arrangement of artificial teeth
5. Arrangement of artificial teeth, clasp bending
6. Fabrication of custom impression tray
7. Flasking and processing of denture
8. Repair of denture
9. Full veneer crown preparation on molars
10. Impression, sectional cast and mounting the cast on the articulator
11. Wax pattern fabrication
12. Full ceramic crown preparation on upper front teeth

13. Dovel core preparation on extracted tooth
14. Direct modelling of dovel core

#### *Seminars*

##### *Exam topics/questions*

1. Full metal crown preparation
2. Odontotechnology of casted crowns
3. Porcelain-fused-to-metal crown preparation
4. Odontotechnology of metal-ceramic crowns
5. Clinical procedures of casted crown fabrication
6. Odontotechnical procedures of casted crown fabrication
7. Jacket crown preparation
8. Odontotechnology of jacket crowns
9. Types of impression trays and their flavour
10. Steps of acrylic crown fabrication in dental laboratory
11. Clinical procedures of casted bridge fabrication
12. Odontotechnical procedures of casted bridge fabrication
13. Direkt modelling and the armamentarium of dovel core
14. Core and root canal preparation for dovel core
15. Types of impression taking for fixed prosthodontics
16. Methods and armamentarium of workig casts and dies fabrication
17. Instrumentation of crown preparation
18. Wax pattern fabrication for fixed prosthodontics
19. Parts of RPD
20. Types of clasps
21. Impression taking for RPD and the design of RPDs
22. Odontotechnology of RPD: waxing the partial denture framework and the casting procedure
23. The general guidelines of rests, seats and retainers of RPD
24. Usage of dental
25. The flavours of record base
26. Types of articulators, mounting the cast on the articulator
27. Recording of CR in CD and RPD
28. Guidelines of static and dinamic arrangement of artificial teeth
29. Perfection and verification of jaw relation record
30. Processing of RPD. Main features of acrylic processing
31. Clinical procedures of RPD fabrication
32. Odontotechnical procedures of RPD fabrication
33. The clinical anatomy of the edentulous maxilla
34. Preparing of denture with self-curing acrylic. The failure of autoplactic acrylic processing
35. Clinical anatomy of edentulous mandibule
36. Different methods of relining and rebasing
37. Clinical and laborator steps of CD fabrication
38. Materials and fabrivcation of custom tray
39. The functional impression, materials and methods
40. The relief and the methods of relief during functional impression and on the cast

#### *Practical exam questions*

1. Full metal crown preparation on upper molar tooth
2. Metal-ceramic crown preparation on upper premolar tooth
3. Full veneer crown preparation on upper front tooth
4. Impression and cast fabrication for full veneer crown
5. Full-ceramic crown preparation
6. Core and root canal preparation, direct modelling of dovel core
7. Impression, cast fabrication for bridgework
8. Mounting sectional cast on the articulator, the split-cast technique
9. Carving of wax rim, mounting the cast on the articulator
10. Wax pattern fabrication for bridgework
11. Impression from the upper and lower jaws for RPD, cast fabrication, relief

12. Clasp bending
13. Relief on upper and lower casts and record base fabrication
14. Repair of denture base
15. Defining the borders of the custom tray
16. Repair of broken clasp
17. Repair of missing tooth
18. Defining the prosthetic equator

## **OSPFSP ORTHODONTICS: BASICS**

Course director:

**DR. GYULA TAMÁS SZABÓ**, assistant lecturer  
Dept. of Dentistry, Oral-, Maxillofacial Surgery

**3 credit • semester exam • Pre-clinical module • autumn semester • recommended semester: 5**

*Number of hours/semester:* **14 lectures + 28 practices + 0 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **2 – 0**

*Prerequisites:* **see in the recommended curricula!**

### *Topic*

#### *Conditions for acceptance of the semester*

Based on the Code of Studies and Examinations.

#### *Making up for missed classes*

None.

#### *Reading material*

#### *Lectures*

1. The base of orthodontics, normal development I (embriology)
2. The base of orthodontics, normal development II (perinatal, postnatal development)
3. The base of orthodontics, normal development III (development of face)
4. Orthodontic terminology
5. Development anomalies of the teeth
6. Orthodontic materials
7. Biological base of toothmovement I
8. Biological base of toothmovement II
9. Orthodontic appliances I
10. Orthodontic appliances II
11. Orthodontical diagnosis I (clinical examination)
12. Orthodontical diagnosis II (orthodontic anomalies)
13. Orthodontical diagnosis III (x-ray methods)
14. Orthodontical diagnosis IV (modell, function, profil)

#### *Practices*

1. Plaster moulding
2. Wire bending I. (Adams clip)
3. Wire bending II. (Adams clip)
4. Wire bending III. (simple hook)
5. Wire bending IV. (double hook)
6. Wire bending V. (labial arch)
7. Preparing an orthodontic appliance (demonstration)
8. Measurements on cephalometrical x-ray I.
9. Measurements on cephalometrical x-ray II.
10. X-ray (OP, PA, CT) examinations
11. Measurements on modells I.
12. Measurements on modells II.
13. Measurements on modells III.
14. Array

#### *Seminars*

##### *Exam topics/questions*

1. Base of orthodontics
2. Odontogenesis
3. Perinatal development of the jaws and the face
4. Normal process of the development from the perinatal period to the complete deciduous dentition
5. Normal development of the jaws from the deciduous dentition until the end of growth
6. Development and change of the dentition
7. Periods of growth and it's forecast
8. Development anomalies of the teeth
9. Orthodontical anomalies
10. Biological base of toothmovement
11. Removable ortodontical appliances, structure, preparation

12. Fixed ortodontical appliances, structure, preparation
13. Steps of orthodontical diagnosis
14. Orthodontic x-ray diagnosis
15. Cephalometrics
16. Employment and elaboration of materials in the Orthodontics
17. Types of multiband appliances

## OSPKO1 PATHOPHYSIOLOGY 1

Course director:

DR. ÁKOS KOLLER, professor  
Department of Pathophysiology and Gerontology

**3 credit • semester exam • Pre-clinical module • autumn semester • recommended semester: 5**

*Number of hours/semester:* **14 lectures + 0 practices + 28 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **3 – 30**

*Prerequisites:* **see in the recommended curricula!**

### Topic

Pathophysiology-1 connects basic functional and clinical subjects. Together with other preclinical subjects, it deals mainly with etiology, time-course, clinical symptoms and possible pharmacological or other interventions related to abnormalities of the cardiovascular, respiratory, hematological and renal systems, as well as with disorders of salt/water and pH balance.

### Conditions for acceptance of the semester

Active participation in the lectures and seminars, less than 15% (maximum 3 weeks) absence from seminars, minimum 50% score on the 2 mid-semester tests.

### Making up for missed classes

Minimum 50% test score on the respective seminar topics.

### Reading material

Basic Concepts in Pathophysiology (ed.: M. Székely), ÁOK PTE, 2007

(Color Atlas of Pathophysiology /S. Silbernagl, F. Lang/, Thieme Stuttgart - New York, 2000)

### Lectures

1. Heart failure.
2. Peripheral circulatory failure: vasovagal syncope, circulatory shock (definition, forms and their causes, phases).
3. The consequences of circulatory shock. Pathophysiology of coronary circulation.
4. Pathophysiology of the cerebral and pulmonary circulation.
5. Hypertension.
6. Pathophysiology of the regulation and mechanics of breathing.
7. Ventilation/perfusion mismatch. Disorders of the alveolo-capillary diffusion.
8. Restrictive/obstructive respiratory disorders, dyspnea.
9. Pathophysiology of the glomerular and tubular functions.
10. Chronic renal failure, uremia, uremic coma.
11. Pathophysiology of the salt-water balance.
12. Disorders of the pH regulation.
13. Pathophysiology of the red blood cell system.
14. Pathophysiology of hemostasis.

### Practices

#### Seminars

1. Heart failure I.
2. Heart failure II.
3. Vasovagal syncope, circulatory shock (definition, forms and their respective causes, phases).
4. Hemodynamic parameters of different types of circulatory shock. Consequences of circulatory shock.
5. Pathophysiology of coronary circulation.
6. Failure of the coronary circulation, reversible and irreversible consequences.
7. Pathophysiology of pulmonary circulation.
8. Etiology and general pathophysiology of hypertension.
9. Complications of hypertension, pathophysiological principles of treatment.
10. Arrhythmias in the dental practice.
11. Alveolar hypoventilation.
12. Alveolar hyperventilation.
13. Respiratory failure I.
14. Respiratory failure II.
15. Cardio-respiratory adaptation to physical exercise I.
16. Cardio-respiratory adaptation to physical exercise II.
17. Pathophysiology of glomerular and tubular functions.
18. Acute renal failure.
19. Uremia, uremic coma I.
20. Uremia, uremic coma II.
21. Abnormalities of the volume and osmoregulation I.

22. Abnormalities of the volume and osmoregulation II.
23. Metabolic acidosis.
24. Metabolic alkalosis, respiratory acidosis and alkalosis.
25. Anemias I.
26. Anemias II. Polycythemias.
27. Pathophysiology of hemostasis.
28. Disseminated intravascular coagulation (DIC).

*Exam topics/questions*

Cardiovascular adaptation in health and disease.

Causes and forms of heart failure.

Forward failure symptoms (left- and right-sided) in heart failure.

Backward failure symptoms (left- and right-sided) in heart failure.

High output cardiac failure.

Collaps, vasovagal syncope, and other circulatory abnormalities leading to loss of consciousness.

Definition and classification of circulatory shock. Pathophysiology of development, phases and characteristics of microcirculation.

Hypovolemic shock: causes and hemodynamics.

Cardiogenic shock: causes and hemodynamics.

Distributive shock: causes and hemodynamics.

Organ manifestations of shock.

Pathogenesis of coronary insufficiency. Risk factors.

Pathomechanism and consequences of acute myocardial infarction.

Mechanisms and consequences of chronic ischemic heart disease.

Regulation of cerebral circulation in health and disease.

Cerebral hypoxia, ischemia, stroke.

Characteristics and disorders of splanchnic blood flow.

Pulmonary hypertension.

General pathophysiology and classification of systemic hypertension. Age and blood pressure.

Hypertension and the kidneys (reciprocal connection).

Hypertension and the adrenal gland.

Primary hypertension: characteristics and etiological factors.

Consequences of hypertension.

Arrhythmias in the dental practice.

Disorders of the control of breathing. Sleep-apnea syndrome.

The work of breathing. Abnormalities of elastic resistance, restrictive disorders.

Abnormalities of airway resistance and their consequences. Causes and consequences of chronic obstructive lung diseases (COPD). Emphysema.

Alveolar hypoventilation: causes and consequences.

Acute and chronic alveolar hyperventilation.

Ventilation-perfusion mismatch (V/Q): causes and consequences.

Disorders of alveolo-capillary diffusion.

Global and partial respiratory failure.

Disorders of oxygen transport (abnormal hemoglobin, CO-poisoning, methemoglobinemia).

Forms and mechanisms of hypoxia. Ways of compensation. Cyanosis.

Dyspnea.

Forms, general pathophysiology and consequences of anemia.

Deficiency anemia.

Hemolytic anemia.

Polycythemia.

Bleeding abnormalities due to platelet or vascular factors.

Congenital and acquired coagulopathies.

Thrombosis: causes and consequences.

Disseminated intravascular coagulation (DIC).  
Granulocytes in inflammatory processes.  
Pathophysiology of glomerular filtration.  
Disorders of tubular functions.  
Proteinuria.

Hypothenuria, asthenuria, osmotic diuresis.  
Chronic renal failure: causes, characteristics and progression.  
Metabolic disorders and organ dysfunctions in uremia.  
Uremic coma.  
Acute renal failure: occurrence, general features.

Compensation of pH-abnormalities (plasma and intracellular buffers, respiration, kidney) and their disturbances.  
Metabolic acidosis: causes, compensation, consequences.  
Metabolic alkalosis: causes, compensation, consequences.  
Respiratory acidosis and alkalosis: causes, compensation, consequences.  
Mechanisms and disturbances of volume regulation. States of decreased extracellular volume, and their consequences.

States of elevated extracellular volume: causes, mechanisms and consequences.  
Hyperosmolarity, hypertonicity. Forms, causes, consequences.  
Hypotonicity: pathogenesis and consequences.  
Disorders of potassium balance. Hypo- and hyperkalemia.

Note: At the oral exam the students take 3 questions.

## OSPMI1 MICROBIOLOGY 1

Course director:

DR. JÚLIA SZEKERES, professor  
Department of Medical Microbiology and Immunology

**5 credit - semester exam - Pre-clinical module - autumn semester - recommended semester: 5**

*Number of hours/semester:* **42 lectures + 28 practices + 0 seminars = total of 70 hours**

*Headcount limitations (min-max.):* **1 – 50**

*Prerequisites:* **see in the recommended curricula!**

### Topic

During the course the morphology, physiology of microbes, the techniques of disinfection and sterilization, the basics of antimicrobial therapy and the drugs used will be discussed. The host-parasite interactions, the factors playing roles in the pathogenesis of infections, the defense mechanisms of the host and the modes of prevention will be detailed. The systematic microbiology part of the course will discuss the microbiological aspects of various infections caused by specific pathogens. Special emphasis will be put on the indigenous flora of the oral cavity, as well as on microorganisms playing a role in the diseases of the oral cavity and the teeth.

The objective is to provide a solid microbiological basis to understand the pathogenesis and clinical aspects of oral diseases of infectious etiology, as well as those of diseases of other organ systems of stomatological relevance.

### Conditions for acceptance of the semester

Attendance of the lectures is up to the judgement of the student. On the other hand, the Department insists on the active participation in all the practices, since necessary knowledge and skills to take and handle microbiological samples can only be mastered there.

The subject of the examinations is the information provided on the lectures and practices during the semester.

### Making up for missed classes

#### Reading material

Samaranayake LP: Essential Microbiology for Dentistry, Churchill Livingstone; 3 edition 2006, ISBN: 0-443-10079-9

J. Bagg, T.W. MacFarlane, I.R. Poxton, A.J. Smith, S.Bagg: Essentials of Microbiology for Dental Students. Oxford University Press, USA; 2 edition 2006, ISBN: 0198564899

Murray PR, Rosenthal KS, Pfaller MA: Medical Microbiology, Elsevier Mosby, 2005, ISBN: 0-323-03303-2

D. Greenwood et al.: Medical Microbiology, Churchill Livingstone, 2003, ISBN: 0-443-07077-6

Brooks GF, Butel JS, Morse SA: Jawetz, Melnick, and Adelberg's: Medical Microbiology, Lange Medical Book, 2004, ISBN: 007-141207-7

F.H. Kayser, K.A. Bienz, J. Eckert, R.M. Zinkernagel: Medical Microbiology, Thieme Stuttgart 2005, ISBN: 3-13-131991-7

A.K. Abbas, A.H. Lichtman, S Pillai: Cellular and Molecular Immunology. (6th ed) Saunders, 2007, ISBN: 1416031227 ( 5th ed 2005, ISBN: 1416023895)

### Lectures

1. Introduction the subject and history of microbiology
2. Morphology and structure of bacteria
3. Morphology and structure of bacteria
4. The physiology of bacteria
5. Sterilization and disinfection
6. Sterilization and disinfection
7. Chemotherapy
8. Chemotherapy
9. Chemotherapy
10. Microbial genetics
11. Pathogenicity, Infection
12. Vaccinology
13. Immunology of infectious disease
14. Immunology of infectious disease
15. Immunology of infectious disease
16. Immunology of infectious disease
17. Virology
18. Virology
19. Virology
20. Virology
21. Virology
22. Pyogenic bacteria
23. Pyogenic bacteria
24. Pyogenic bacteria

25. Enteric bacteria and gastrointestinal pathogens
26. Enteric bacteria and gastrointestinal pathogens
27. Enteric bacteria and gastrointestinal pathogens
28. Pathogens in respiratory tract Mestyán Gyula Dr.
29. Pathogens in respiratory tract Mestyán Gyula Dr.
30. Mycobacteria
31. Aerobic and anaerobic spore forming bacteria
32. Aerobic and anaerobic spore forming bacteria
33. Spirochaetes
34. Rickettsia, Chlamydia
35. Mycology Mestyán Gyula Dr.
36. Parasitology
37. Oral microbiology
38. Oral microbiology
39. Oral microbiology
40. Oral microbiology
41. Oral microbiology
42. Oral microbiology

#### *Practices*

1. introduction, safety regulations. The microscope, native and stained preparation
2. introduction, safety regulations. The microscope, native and stained preparation
3. Cultivation of bacteria, media
4. Cultivation of bacteria, media
5. Biochemical reaction in the identification
6. Biochemical reaction in the identification
7. Antibiotic sensitivity
8. Antibiotic sensitivity
9. Serology
10. Serology
11. Molecular diagnostics
12. Molecular diagnostics
13. Bacteriological diagnostics of pyogenic infections; blood cultures
14. Bacteriological diagnostics of pyogenic infections; blood cultures
15. Bacteriological diagnostics of urinary tract infections
16. Bacteriological diagnostics of urinary tract infections
17. Bacteriological diagnostics of gastrointestinal infections
18. Bacteriological diagnostics of gastrointestinal infections
19. Bacteriological diagnostics of respiratory tract infections and meningitis
20. Bacteriological diagnostics of respiratory tract infections and meningitis
21. Anaerobic infections
22. Anaerobic infections
23. Diagnostic virology
24. Diagnostic virology
25. Diagnostic mycology and parasitology
26. Diagnostic mycology and parasitology
27. Diagnostic oral microbiology
28. Diagnostic oral microbiology

#### *Seminars*

##### *Exam topics/questions*

THE WRITTEN EXAM CONSISTS OF MULTIPLE CHOICE QUESTIONS

## **OSPORR ORAL RADIOLOGY**

*Course director:*

**DR. GYULA MARADA**, assistant lecturer  
Dept. of Dentistry, Oral-, Maxillofacial Surgery

**3 credit - semester exam - Pre-clinical module - autumn semester - recommended semester: 5**

*Number of hours/semester:* **14 lectures + 28 practices + 0 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **2 – 30**

*Prerequisites:* **see in the recommended curricula!**

### *Topic*

Students should acquire all radiologic diagnostic methods used in dentistry. Students should be able to make intraoral x-ray.

### *Conditions for acceptance of the semester*

According to the Code of Studies and Examinations.

### *Making up for missed classes*

None.

### *Reading material*

Eric Whaites: Essentials of Dental Radiography and Radiology, CHURCHILL LIVINGSTONE, 2002

### *Lectures*

1. Principles of Radiology. Equipments
2. Radiation detectors. Exposure
3. Intraoral techniques. Anatomy of intraoral radiographs
4. Extraoral techniques
5. Anatomy of panoramic radiographs
6. Radiation protection
7. Radiological terminology, radiological diagnosis. Development of teeth.
8. Cariology in radiology. Abrasion of teeth. Inflammation of the pulp.
9. Diseases of apical and marginal periodontium
10. Traumatic diseases of jaws and teeth
11. Prosthodontic aspects of radiology
12. Digital radiological techniques (RVG, CBCT)
13. Endodontic aspects of radiology
14. Radiological failures

### *Practices*

1. 28. Intraoral x-ray exposure and processing

### *Seminars*

#### *Exam topics/questions*

1. Oral radiologic equipments
2. Radiograph of teeth. The rule of bisecting angle and parallel technique
3. Radiographic features of periapical conditions on the lower arch
4. Radiographic features of periapical conditions on the upper arch
5. Radiographs of the crown
6. Occlusal radiographs
7. Pediatric dental radiographs
8. Extraoral radiographs
9. Radiographs of the maxilla
10. Radiographs of the mandible
11. Rules of contact radiographs. Cephalographs
12. Panoramic radiographs
13. Exposure
14. Processing of dental radiographs
15. Equipments of digital intraoral radiology
16. CT and CBCT in dentistry
17. Density and contrast
18. Radiation failures. Failures before processing
19. Failures of film processing
20. Radiation protection
21. Protection of patients

22. Protection of staff
23. Assessment of alveolar bone
24. Anatomy of teeth
25. Assessment of perapical radiographs
26. Development of teeth
27. Endodontic procedures and their radiologic aspects
28. Radiological aspects of tooth extraction
30. Malpositions, eruption anomalies
31. Caries
32. Inflammation of apical periodontium
33. Diseases of the marginal periodontium
34. Dental trauma
35. Traumatism of the jaws
36. Osteomyelitis
37. Sialolith
38. Fillings, fix and removable partial dentures

Practical exam: intraoral radiograph taking for patients

## OSPPA1 PATHOLOGY FOR DENTAL STUDENTS 1

Course director:

DR. LÁSZLÓ PAJOR, professor  
Department of Pathology

**6 credit - semester exam - Pre-clinical module - autumn semester - recommended semester: 5**

*Number of hours/semester:* **56 lectures + 0 practices + 28 seminars = total of 84 hours**

*Headcount limitations (min-max.):* **1 – 0**

*Prerequisites:* **see in the recommended curricula!**

### *Topic*

The basic pathological cellular responses, underlying the various disease processes, are taught during this course. To this end general pathology is subdivided into cellular injury and death, degeneration, pathological accumulation of substances, growth disturbances, acute and chronic inflammatory changes, haemodynamic disorders, genetic disorders, diseases of immunity and neoplasia (general oncology) chapters. The most important and frequent diseases in the various chapters are going to be discussed in detail in order to provide students with comprehensive knowledge to understand autopsy practices as soon as possible. The driving principle behind this course is to have the student understood the disease concept as the unity of macroscopy, microscopy, clinical symptoms and laboratory changes which forms the clinicopathological thinking about diseases.

### *Conditions for acceptance of the semester*

Acceptance of the semester: according to the Code of Studies and Examinations.

Absences exceeding 10% of each the histopathology and autopsy practical classes in either semester will result in not signing the gradebook.

One macropreparation, one histological preparation and a theoretical question will be given to the student at the examination by the end of the first semester.

### *Making up for missed classes*

None.

### *Reading material*

#### *Lectures*

- I. Introduction -- Postmortem changes - cell death (5 lectures; lecturer: Dr. Pajor)
  1. Introduction to pathology. Historical overview. The role of pathology in sciences.
  2. The role of diagnostic pathology in modern medicine. The methodology of pathology.
  3. Criteria of death. Post-mortem changes at organ, cellular and subcellular level. Necrosis vs apoptosis
  4. The types of necrosis: microscopic and macroscopic changes.
  5. Pathology of myocardial infarction
- II. Degeneration, pathological accumulation, pigments, calcification (10 lectures; lecturer: Dr. Pajor)
  1. The types of degeneration, relation between necrosis and degeneration. Parenchymal and fatty degeneration.
  3. Exogenous pigment accumulation.
  4. Endogenous, hemoglobinogenic pigment accumulation.
  5. Endogenous, non-hemoglobinogenic pigment accumulation.
  6. Accumulation of proteins. Amyloidosis.
  7. Calcification.
  8. Lithiasis.
- III. Growth disturbances (5 lectures; lecturer: Dr. Pajor)
  1. Regressive changes: atrophy. Organ examples.
  2. Progressive changes: hyperplasia. Prostatic hyperplasia. Glandular cystic hyperplasia of the endometrium.
  3. Progressive changes: hypertrophy. Left and right ventricular hypertrophy and their hemodynamic significance
  4. Regeneration. Wound healing
- IV. Circulation (6 lectures; lecturer: Dr. László Terézia)
  1. Edema, hyperemia, congestio
  2. Types and pathomechanism of haemorrhages
  3. OHemorrhage, organ manifestations of haemorrhages.
  4. Haemostasis, thrombosis.
  5. Embolisation, disseminated intravascular coagulation
  6. Shock, hypertension.
- V. Inflammation (10 lectures; lecturer: Dr. Pajor)
  1. Definition of inflammation, historical overview.
  2. Acute inflammatory response, vascular reactions, permeability-exudation.
  3. Classification of acute inflammations 1: serous and fibrinous inflammation. Organ examples.
  4. Classification of acute inflammations 2: purulent, hemorrhagic and gangraenous inflammation. Organ examples.
  5. Definition and classification of chronic inflammation. Cellular and humoral mediators.

6. Granulomatous inflammation (sarcoidosis, foreign body type giant cell reaction), organ examples.
  7. Pathogenesis of tuberculosis and its pathomorphology.
  8. Clinicopathological presentations of tuberculosis.
  9. Autoimmune chronic inflammation. Rheumatoid arthritis
- VI. Immunopathology (5 lectures; lecturer: Dr. Pajor)
1. Type I. and II. hypersensitivities and related disorders
  2. Type III. and IV. hypersensitivity reactions and related disorders
  3. Transplantation immunity
  4. Pathogenesis of autoimmune diseases.
  5. Systemic lupus erythematoses (SLE)
  6. Congenital immunodeficiency syndromes
  7. Aquired immunodeficiency syndrome (AIDS)
- VII. Genetics (5 lectures; lecturer: Dr. Pajor)
1. The incidence of genetic disorders, types of mutations and the 4 prototypes of the genetic disorders.
  3. The Mendelian disorders: autosomal recessive disorders.
  43. X-linked inheritance. Disorders with polygenic inheritance
  54. Single gene disorders with non-classic inheritance.
- VIII. Oncology (10 lectures; lecturer: Dr. Pajor)
- 1.1. Characterisation of benign and malignant tumours
  - 1.2. Tumor epidemiology.
  - 2.3. The classification of tumours according to their histogenesis. The basis of immunohistochemical differential diagnostics.
  - 3.4. Chemical and irradiation cancerogenesis.
  - 4.5. The role of oncogenes in tumorigenesis.
  - 5.6. The role of tumour suppresser genes in tumorigenesis.

#### Practices

1. There is a special emphasis on the clinicopathological view of the diseases, i.e., understanding the interrelationship of the clinical symptoms, macroscopical and microscopical changes of the diseased organs.
2. During the autopsy practice the actual organ lesions and their clinicopathological connections will be demonstrated.

#### Seminars

1. Postmortal changes - necrosis: Adipocera /P/, Postmortal emphysema of the liver /P/, Normal and postmortal pancreas (HE)/S/
2. Necrosis-apoptosis: Karyorrhexis in inadequately handled sample (HE) /S/,
- 3-4. Coagulative necrosis: Anaemic infarct of the heart /P/, Anaemic infarct of the spleen and splenomegaly /P/, Pylethrombosis(thrombosis of the portal vein) /P/, Mycotic enteritis /P/,
- 3-4. Coagulative necrosis: Anaemic infarct of the heart /P/, Anaemic infarct of the spleen and splenomegaly /P/, Pylethrombosis (thrombosis of the portal vein) /P/, Mycotic enteritis /P/,
5. Liquefactive necrosis: Cysta post encephalomalaciam - chr. Endocarditis /P/, Cerebral abscess /P/, Pancreas fatnecrosis -- acute pancreatitis /P/
6. Degeneration: Insular fatty degeneration of the myocardium /P/, Steatosis hepatic /P/, Hepar moschatum adiposum /P/,
7. Pathological accumulation: Fatty infiltration of the myocardii /P/, Aortic athersclerosis -- complicated plaques in abdominal aorta /P/,
8. Pigment accumulation - Endogenous pigments: Haemochromatosis universalis (Prussian blue) /P/, Brown induration of the lung /P/, Brown atrophy of the heart /P/, Malignant melanoma /P/, Ochronosis /P/
9. Pigment accumulation - Exogenous pigments: Miliary and tumorous silicosis of the lung /P/, Miliary silicosis of the lung (HE) /S/, Anthracosis of lymph node (HE) /S/
10. Calcification, lithiasis: Cholelithiasis – empyema /P/, Table of frequent stones, Petrified myoma of the uterus /P/, Microcalcification of the breast (mammography), Urolithiasis – hydronephrosis /P/, Nodular calcified aortic stenosis /P/
11. Growth disturbances: Brown atrophy of the heart /P/, Cerebral atrophy /P/, Atrophy of the kidney, nephrosclerosis /P/, Concentric hypertrophy of the left ventricule of the heart /P/, Dilatative hypertrophy of the left ventricule of the heart /P/ Chronic cor pulmonale /P/
12. Growth disturbances: Prostatic hyperplasia /P/, Glandular cystic hyperplasiaof the endometrium (HE) /S/, Prostatic hyperplasia (HE) /S/, Follicularis hyperplasia (lymph node) (HE) /S/, Paracorticalis hyperplasia (lymph node) (HE) /S/
13. Circulation I.: Hemorrhage: Epidural hemorrhage /P/, Chronic subdural hemorrhage /P/,
14. Edema, congestion: Cerebral edema, incarceration of cerebellar tonsils /P/, Brown induration of the lung /P/
15. Thrombosis: Abdominal aortic aneurysm - parietal thrombosis /P/, Endocarditis - left atrial 'ball' thrombus /P/, Septic endocarditis /P/, Lung infarct /P/
16. Embolisation: Partial pulmonary embolisation - pulmonary infarct (HE) /S/, Fat emboli in kidney (lipid stain) /S/
17. Fibrinous, fibrinopurulent inflammation: Fibrinous pericarditis - cor villosum /P/, Concretio pericardii /P/, Lobar pneumonia /P/, Bronchopneumonia /P/
18. Gangrenous inflammation: Foreign body in bronchi /P/, Acute appendicitis (HE) /S/

19. Specific granulomatous inflammation: Miliary tuberculosis of the lungs /P/, Generalised tuberculosis /P/, Phtisis cavernosa /P/, Phtisis renalis /P/
20. Specific granulomatous inflammation: Pulmonary sarcoidosis – BHL /P/, Sarcoidosis in lymph node (HE) /S/, Lipogranuloma in breast (HE) /S/, Foreign body granuloma (HE) /S/
21. Immunopathology: Follicular hyperplasia (lymph node) (HE) /S/, Paracortical hyperplasia (lymph node) (HE) /S/, Eosinophil cell reaction in nasal polyp (HE) /S/, Hashimoto thyroiditis (HE) /S/, Bronchial asthma (HE and PAS) /S/
22. Immunopathology: Acute rejection in kidney /P/, Honeycomb lung /P/, Amyloidosis with plasmacell dyscrasia /P/, Acute rejection in kidney (HE and PAS) /S/, CMV lung (HE) /S/, Renal amyloid (Congo) (slide presentation)
23. Genetic: The Mendelian disorders: Mucoviscidosis /P,S/ Thesaurismosis: Gaucher disease (HE) /S/
24. Disorders with polygenic inheritance: Anencephaly /P/, Spina bifida and meningomyelocele /P/
25. Metaplasia - dysplasia: Leukoplakia of the cervical portion /P/, Excised pregnant uterus because of cervical carcinoma /P/ Cervical intraepithelial neoplasia CIN III (PAS) /S/
26. Other tumors: Leiomyoma of uterus /P/, Cysta dermoides /P/, Meningeoma /P/, Carcinoma planocellulare of lower lip (HE) /S/
27. Local and metastatic tumour spreading: Pulmonary metastases /P/, Lymphangitis carcinomatosa /P/, Linitis plastica and Krukenberg tumor /P/, Carcinoma ventriculi (lymph node metastasis) (HE)
28. Clonality, prognosis, histogenesis: Myeloma multiplex (kappa, lambda IPO) /S/, Invasive breast carcinoma (lymph node metastasis) (PR + HE) /S/, Polypus adenomatousus coli (p53) /S/

*Exam topics/questions*

Preparations

I. Postmortal changes - necrosis

1. Adipocera
2. Postmortal emphysema of the liver
3. Necrosis and its subtypes (oncosis, apoptosis) (photo)
4. Anaemic infarct of the heart
5. Anaemic infarct of the spleen and splenomegaly
6. Pylethrombosis, (thrombosis of the portal vein)
7. Mycotic enteritis
8. Phthisis renalis (caseation)
9. Sacral decubitus
10. Gangraena sicca of the toes
11. Cysta post encephalomalaciam - chr. endocarditis
12. Cerebral abscess
13. Pancreas fatnecrosis -- acute pancreatitis

II. Degeneration, pathological accumulation, pigments, calcification

14. Insular fatty degeneration of the myocardium
15. Steatosis hepatis
16. Hepar moschatum adiposum
17. Fatty infiltration of the myocardii
18. Aortic atherosclerosis -- complicated plaques in abdominal aorta
19. Haemochromatosis universalis (Prussian blue)
20. Brown induration of the lung
21. Brown atrophy of the heart
22. Malignant melanoma
23. Ochronosis
24. Miliary and tumorous silicosis of the lung
25. Amyloidosis with plasmacell dyscrasia
26. Cholelithiasis - empyema
27. Table of frequent stones
28. Petrified myoma of the uterus
29. Microcalcification of the breast (mammography)
30. Urolithiasis -- hydronephrosis
31. Nodular calcified aortic stenosis

III. Growth disturbances

32. Brown atrophy of the heart
33. Cerebral atrophy
34. Atrophy of the kidney, nephrosclerosis
35. Concentric hypertrophy of the left ventricle of the heart
36. Dilatative hypertrophy of the left ventricle of the heart
37. Chronic cor pulmonale
38. Prostatic hyperplasia

#### IV. Circulation

39. Epidural hemorrhage
40. Chronic subdural hemorrhage
41. Subarachnoid hemorrhage
42. Cerebral apoplexy
43. Cerebral purpura
44. Cerebral edema, incarceration of cerebellar tonsils
45. Brown induration of the lung
46. Abdominal aortic aneurysm -- parietal thrombosis
47. Left atrial -- ball -- thrombus
48. Lung infarct

#### V. Inflammation

49. Fibrinous pericarditis - cor villosum
50. Concretio pericardii
51. Lobar pneumonia
52. Bronchopneumonia
53. Purulent meningitis
54. Pulmonary abscess
55. Hepatic abscess
56. Cerebral abscess
57. Chronic cholecystitis
58. Chronic pyelonephritis
59. Chronic endocarditis and cysta post encephalomalatiam
60. Miliary tuberculosis of the lungs
61. Generalised tuberculosis
62. Phthisis cavernosa
63. Phthisis renalis (repetition)
64. Pulmonary sarcoidosis - BHL
65. Pleural callus
66. Foreign body in bronchi

#### VI. Immunopathology

67. Acute rejection in kidney
68. Honeycomb lung

#### VII. Genetics

69. Anencephaly
70. Spina bifida (meningomyelocele)
71. Mucoviscidosis (meconium ileus)

#### VIII. Oncology

72. Leukoplakia of the cervical portion
73. Cervical carcinoma
74. Fibroadenoma of breast

75. Carcinoma of the breast
76. Bronchial carcinoma
77. Rectal polyp
78. Rectal adenocarcinoma
79. Leiomyoma of uterus
80. Cysta dermoides
81. Meningeoma
82. Pulmonary metastases
83. Lymphangitis carcinomatosa
84. Linitis plastica and Krukenberg tumor

#### Slides

##### I. Postmortal changes - necrosis

1. Normal and postmortal pancreas (HE)
2. Karyorrhexis in inadequately handled sample (HE)
3. Anaemic infarct of the myocardium (HE)
4. Hemorrhagic infarct of the lung (HE)
5. Caseous lymphadenitis (HE)
6. Encephalomalacia alba (HE)
7. Acute pancreatitis -- fatnecrosis (HE)

##### II. Degeneration, pathological accumulation, pigments, calcification

8. Insular fatty degeneration of the myocardium (Oil Red)
9. Steatosis hepatis (HE and Oil Red)
10. Aortic atheromatosis (Oil Red)
11. Haemosiderosis of liver (Prussian blue and HE)
12. Bile pigment in cirrhotic liver (HE)
13. Brown induration of the lung (Prussian blue)
14. Malignant melanoma (HE)
15. Miliary silicosis of the lung (HE)
16. Anthracosis of lymph node (HE)
17. Renal amyloid (Congo) (presentation)
18. Calcification in breast cancer (Kossa reaction) (presented with mammograph)
19. Psammom bodies (Carcinoma papillare) (HE)

##### III. Growth disturbances

20. Neonatal (diploid nuclei) and hypertrophic (polyploid nuclei) cardiac muscle (HE)
21. Glandular cystic hyperplasia of the endometrium (HE)
22. Prostatic hyperplasia (HE)

##### IV. Circulation

23. Hepar moschatum adiposum (HE)
24. Pulmonary edema (HE)
25. Thrombosis of femoral artery with recanalisation (HE)
26. Partial pulmonary embolisation -- pulmonary infarct (HE)
27. DIC (fibrinthrombi in kidney) (fibrin stain)
28. Fat emboli in kidney (lipid stain)

##### V. Inflammation

29. Fibrinous pericarditis - cor villosum (HE)
30. Lobar pneumonia (HE)
31. Bronchopneumonia (HE)

32. Purulent meningitis (HE)
33. Cerebral abscessus (HE)
34. Acute appendicitis (HE)
35. Chronic cholecystitis (HE)
36. Foreign body granuloma (HE)
37. Miliary tuberculosis of the lung (HE)
38. Mycobacterial infection demonstration (ZN)
39. Sarcoidosis in lymph node (HE)
40. Lipogranuloma in breast (HE)

#### VI. Immunopathology

41. Follicular hyperplasia (lymph node) (HE)
42. Paracortical hyperplasia (lymph node) (HE)
43. Eosinophil cell reaction in nasal polyp (HE)
44. Hashimoto thyroiditis (HE)
45. Bronchial asthma (HE and PAS)
46. Acute rejection in kidney (HE and PAS)
47. CMV lung (HE)

#### VII. Genetics

48. Mucopolysaccharidosis (HE)
49. The storage disease: Gaucher disease (HE)

#### VIII. Oncology

50. Cervical intraepithelial neoplasia CIN III (PAS)
51. Carcinoma planocellulare of lower lip (HE)
52. Carcinoma coli (lymph node metastasis) (HE)
53. Myeloma multiplex (kappa, lambda IPO)
54. Invasive breast carcinoma (lymph node metastasis) (PR + HE)
55. Polyp adenomatous coli (p53)

#### Exam questions

##### I. Introduction -- Postmortem changes - cell death

1. The objectives of pathology and its place among the biomedical disciplines. Significance of biopsy (surgical pathology) and autopsy in the everyday medical practice. Brief summary of the historical development of pathology (humoral- and solid pathology, Morgagni, Virchow, molecular pathology)
2. Methodology of pathology (light-, polarisation- and electronmicroscopy, histo- and cytochemistry, immunohistology, in situ molecular biological methods, flow cytometry; examples which were discussed or demonstrated during lectures and seminars).
3. The definition and criteria of death. Supravital reactions. Early and late post-mortem changes. Sudden infant death syndrome (SIDS).
4. Different forms of response to injury. Causes, pathomechanism, light- and electronmicroscopical hallmarks of cellular necrosis. Apoptosis.
5. Coagulative necrosis, organ manifestations
6. Clinicopathology of the acute myocardial infarction (AMI)
7. Liquefactive necrosis, organ manifestations

##### II. Degeneration, pathological accumulation, pigments, calcification

8. The definition and types of degenerations. Parenchymal and fatty degeneration. Organ examples.
9. Pathomorphology, pathogenesis and complications of atherosclerosis
10. Exogenous and endogenous pigments. Histochemical characteristics of the different pigments
11. Anthracosis and silicosis
12. Hemoglobinogenic pigments I. Porphyrin and haematoidin.

13. Hemoglobinogenic pigments II. Different forms of jaundice and cholestasis, morphology, differential diagnostics.
14. Hemoglobinogenic pigments III. Pathological forms of iron storage.
15. Endogenous non-hemoglobinogenic pigments: lipofuscin, melanin, homogentisinic acid.
16. Dystrophic calcification. Causes, pathomechanism and organ manifestations
17. Metastatic calcification. Causes, pathomechanism, organ manifestations.
18. Pathomechanism and clinicopathological forms of stone formation.
19. Definition and general characterisation of amyloidosis. Physico-chemical, ultrastructural and histochemical nature of amyloid. Types of amyloid fibrils
20. Clinicopathological forms of amyloidosis, organ manifestations (gross morphology and light microscopy)

### III. Growth disturbances

21. Causes of atrophy; general gross morphology and microscopical characteristics. Pathomechanism of atrophy
22. Definition of atrophy, hypoplasia, aplasia, agenesis. Osteoporosis.
23. Cerebral atrophy - Alzheimer disease.
24. Definition, types and organ examples of hyperplasia.
25. Glandular cystic hyperplasia of the endometrium. Bone marrow hyperplasia
26. Prostate hyperplasia. Lymph node hyperplasia (follicular and paracortical)
27. Definition of hypertrophy (causes, morphology, changes at cell cycle)
28. Left ventricular hypertrophy. Causes, sequential compensatory changes and functionally consequences.
29. Cor pulmonale chronicum.
30. Healing by primary and secondary intention (Sanatio per primam et per secundam intentionem)

### IV. Thrombosis, embolism, edema, hemorrhages

31. Definition of edema, pathomechanism (Starling law), clinical forms.
32. Pathomechanism of hemorrhages. Clinical presentations.
33. Clinical presentation of hemorrhages.
34. Pathomechanism of hemorrhagic diatheses, clinical forms.
35. Definition, and forms and pathogenesis of thromboses, factors affecting thrombus formation.
36. Clinical consequences of thrombosis, the fate of thrombus.
37. Disseminated intravascular coagulation (DIC): definition, pathomechanism, complications.
38. Definition and forms of embolism
39. Causes and pathomechanism of shock.
40. Clinicopathological classification of hypertension and complications

### V. Inflammation

41. Vascular and humoral mechanisms of acute inflammations
42. Cellular mechanism of acute inflammation.
43. Clinicopathological classification of the acute inflammations I.: Serous and fibrinous inflammations. Organ examples.
44. Clinicopathological classification of the acute inflammations II.: Purulent, haemorrhagic and gangrenous inflammation. Organ examples.
45. Definition, cellular and humoral mechanisms and classification of chronic inflammations
46. Pathogenesis and pathomorphology of tuberculosis
47. Clinicopathological presentation of tuberculosis
48. Foreign body type of inflammatory response (characteristics and examples)
49. Autoimmune chronic inflammations. Rheumatoid arthritis

### VI. Immunopathology

50. Type I. and type II. hypersensitivity reactions, mechanisms and related disorders.
51. Type III. and type IV. hypersensitivity reactions, related disorders.
52. Transplantation immunity
53. Pathogenesis of autoimmune disorders
54. Systemic lupus erythematoses (SLE)
55. Congenital immunodeficiency syndromes
56. Acquired immunodeficiency syndrome (AIDS)

## VII. Genetics

57. The incidence of genetic disorders and the basic types of mutations. The four types of genetic disorders.
- 58/. The four types of the genetic disorders. Autosomal dominant inheritance: characteristics and examples
59. Autosomal recessive and X-linked inheritance: hallmarks and examples.
- 60.. Multifactorial inheritance and examples.
61. Marfan and Ehlers-Danlos syndromes.
62. Familiar hypercholesterinaemia
63. Cystic fibrosis
64. The lysosomal storage disorders, glycogenoses, mucopolysacharidoses.
65. Multifactorial inheritance and disease examples.
66. Single gene disorders with non-mendelian inheritance and related disorders.

## VIII. Oncology

67. The definition of metaplasia, examples. Interrelationship of metaplasia and dysplasia
68. The definition and morphological characteristics of dysplasia - anaplasia, organ examples for dysplasia..
69. General characteristics of benign and malignant tumours. Terminology and histogenetic classification of tumours.
70. Characteristics and analysis of kinetics of tumour cell growth. Clonality of tumours, methods to investigate clonality
71. Local and metastatic tumour spreading
72. Hereditary and acquired precancerous conditions and their pathomechanisms predisposition for cancer and pathomechanisms.
73. Overall cancer epidemiology (the most frequent tumours, geographic and age related differences)
74. The role of oncogenes and tumor suppressor genes in the cancerogenesis
75. Chemical and radiation cancerogenesis
76. Viral cancerogenesis
77. Oncopathological diagnostic strategy, grading, staging

Comment: The Department of Pathology reserves the right of minor modifications in the curriculum

## **OSPBR INTERNAL MEDICINE: PROPAEDEUTICS**

Course director:

DR. ISTVÁN WITTMANN, professor  
2nd Department of Internal Medicine

**3 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6**

*Number of hours/semester:* **14 lectures + 28 practices + 0 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **1 – 150**

*Prerequisites:* **see in the recommended curricula!**

### *Topic*

Introducing into internal medicine. The main aim of this course is to develop skills in history taking and physical examination.

### *Conditions for acceptance of the semester*

The maximum permitted number of absences is 2 practices.

### *Making up for missed classes*

The maximum permitted number of absences is 2 practices. Each further missed practice has to be made up for during the semester period.

### *Reading material*

Bickley L.S.: Bates Guide to Physical examination and history taking. 9th edition. Lippincott Williams and Wilkins 2007.

### *Lectures*

1. Introduction. The principles of physical examination.
2. Techniques of physical examination. Physical examination of the head and neck region.
3. History taking in chest and lung diseases.
4. Physical examination of the chest and lung.
5. Disorders of the respiratory system (pneumonia, bronchial asthma, pleural effusion, tumors).
6. History taking in cardiovascular diseases. Physical examination of the cardiovascular system I.
7. Physical examination of the cardiovascular system II.
8. Symptoms and signs of common cardiovascular diseases (ischemic heart disease, valvular diseases, heart failure).
9. Symptoms of the abdominal diseases.
10. Physical examination of the abdomen.
11. Common diseases of the gastrointestinal tract.
12. Symptoms and signs of the metabolic disorders.
13. Symptoms and signs of common renal diseases (glomerulonephritis, nephrotic syndrome, urinary tract infections).
14. Symptoms and signs of common haematological diseases.

### *Practices*

The themes of the practices follow the themes of the lectures.

### *Seminars*

### *Exam topics/questions*

The exam is at bedside and focus on the skill of the student about history taking and physical examination.

## **OSPFL1 PROSTHODONTICS 1**

*Course director:*

**DR. GYULA SZABÓ**, professor  
Dept. of Dentistry, Oral-, Maxillofacial Surgery

**3 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6**

*Number of hours/semester:* **14 lectures + 28 practices + 0 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **0 – 0**

*Prerequisites:* **see in the recommended curricula!**

*Topic*

*Conditions for acceptance of the semester*

*Making up for missed classes*

*Reading material*

*Lectures*

*Practices*

*Seminars*

*Exam topics/questions*

## OSPKO2 PATHOPHYSIOLOGY 2

Course director:

DR. ÁKOS KOLLER, professor  
Department of Pathophysiology and Gerontology

**3 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6**

*Number of hours/semester:* **14 lectures + 0 practices + 28 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **3 – 30**

*Prerequisites:* **see in the recommended curricula!**

### Topic

Pathophysiology 2 deals with the etiology, time-course and clinical symptoms, as well as with possible pharmacological and other interventions in disorders of the gastrointestinal system, energy balance, intermediary metabolism and the endocrine systems.

### Conditions for acceptance of the semester

Active participation in the lectures and seminars, less than 15% (maximum 3 weeks) absence from seminars, minimum 50% score on the 2 mid-semester tests.

### Making up for missed classes

Minimum 50% test score on the respective seminar topics.

### Reading material

Basic Concepts in Pathophysiology (ed.: M. Székely), ÁOK PTE, 2007

Color Atlas of Pathophysiology /S. Silbernagl, F. Lang/, Thieme Stuttgart - New York, 2000

### Lectures

1. Gastroenterology (pathophysiology of the esophageal and gastric functions).
2. Diarrhea
3. Pathophysiology of liver functions (intermediary metabolism, jaundice).
4. Energy intake, metabolism.
5. Overfeeding, obesity.
6. Pathophysiology of thermoregulation.
7. Etiology and pathogenesis of diabetes mellitus syndromes.
8. Chronic consequences of diabetes mellitus syndromes.
9. Disorders of protein metabolism.
10. Abnormalities of lipid metabolism.
11. Disorders of the hypothalamus-pituitary system. Pituitary deficiency.
12. Abnormalities if the thyroid functions (hypofunction).
13. Glucocortoid therapy.
14. Complex topics: gerontology.

### Practices

### Seminars

1. Gastroenterology (vomiting, peptic ulcer).
2. Diarrhea.
3. Maldigestion, malabsorption. Bowel obstruction.
4. Pancreatitis (acute, chronic).
5. Pathophysiology of liver function (portal hypertension, ascites, cirrhosis).
6. Hepatic coma. Hepatorenal syndrome.
7. Total starvation.
8. Partial starvation.
9. Etiology and pathogenesis of obesity.
10. Complications of obesity, metabolic syndrome.
11. Cold-defence and cold-induced disorders. Warm-defence and heat-induced disorders.
12. Fever and sickness-behavior.
13. Diabetes mellitus syndromes: pathomechanism. Acute complications of diabetes mellitus syndromes I.
14. Acute complications of diabetes mellitus syndromes II.
15. Chronic complications of diabetes mellitus syndromes.
16. Hypoglycemias.
17. Disorders of protein metabolism.
18. Disorders of nucleic acid metabolism. Gout.
19. Abnormalities of lipid metabolism.
20. Pathomechanisms of atherosclerosis.
21. Causes and consequences of hyperprolactinemia. Disorders of growth.

22. Disorders of thyroid functions (hyperfunctions).
23. Hypo- and hyper-functions of the adrenal medulla.
24. Hypo- and hyper-functions of the adrenal cortex.
25. Parathyroidea, disorders of calcium metabolism and bone remodelling I.
26. Parathyroidea, disorders of calcium metabolism and bone remodelling II.
27. Complex topics: tissue injury, trauma, sepsis.
28. MODS (multiple organ dysfunctions).

*Exam topics/questions*

Saliva production and its role in dental health and oral mucosal protection.

Disorders of gastric filling and emptying. Gastro-esophageal reflux disease.

Vomiting (acute, chronic).

Disorders of gastric juice production. Peptic ulcer.

Utilization of nutrients and its disorders. Maldigestions. Specific malabsorption syndromes (level or substrate of disorder).

Complex malabsorption syndromes.

Diarrhea: causes, pathophysiological forms, consequences.

Bowel obstruction.

Acute pancreatitis: pathophysiology and consequences.

Pathophysiology of chronic pancreatitis.

Disorders of intermediary metabolism in general liver cell damage.

Jaundice.

Portal hypertension, ascites. Hepatorenal syndrome.

Hepatic coma.

Water-soluble vitamins.

Fat-soluble vitamins.

Complete starvation: occurrence and process.

Partial starvation, accelerated forms of energetic insufficiency. Anorexia nervosa.

Protein deficiency. Protein-calorie malnutrition. Consequences of excessive protein intake.

Etiology and pathogenesis of obesity.

Consequences of obesity. Therapeutic possibilities.

Metabolic syndrome.

Cold-defense and cold-induced disorders.

Warm-defense and heat-induced disorders.

Heat stroke and malignant hyperthermia.

Pathogenesis of fever. Fever and sickness-behavior. The biological value of fever.

Hyperglycemia and glucose-tolerance tests. Diagnosis of diabetes mellitus.

General pathobiochemistry of diabetes mellitus syndrome.

Etiology and pathogenesis of DM1.

Etiology and pathogenesis of DM2.

Diabetic ketoacidosis (DKA) and ketoacidotic coma.

Diabetic hyperosmolar syndrome (HHS) and coma.

Late complications of diabetes mellitus.

Hypoglycemia.

Disorders of nucleic acid metabolism. Gout.

Pathobiochemistry of LDL-metabolism. Primary hyperlipoproteinemia.

Secondary hyperlipoproteinemia. Atherosclerosis.

Disorders of the hypothalamo-pituitary system. Pituitary insufficiency.

Hyperprolactinemia.

Pathophysiology of growth.

Hyperthyroidism.

Hypothyroidism.

Disturbances of the adrenal medulla and the sympathetic system. Pheochromocytoma.

Adrenal (cortex) insufficiency.  
Primary and secondary hyperaldosteronism.

Glucocorticoid hyperfunctional states.  
Pathophysiological aspects of glucocorticoid therapy.  
Parathyroid abnormalities.  
Hypocalcemia, hypercalcemia.  
Mechanisms and disturbances of bone remodeling. Osteoporosis, osteomalacia.

Basic pathophysiological concepts of gerontology.  
Tissue injury, trauma, sepsis. MODS (multiple organ dysfunctions).

Note: The oral exam consists of 3 questions.

## OSPKRA CLINICAL RADIOLOGY

Course director:

DR. ISTVÁN BATTYÁNI, associate professor  
Department of Radiology

**2 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6**

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

*Headcount limitations (min-max.):* **1 – 150**

*Prerequisites:* **see in the recommended curricula!**

### Topic

The aim of the subject is to learn the diagnostic algorithm of main diseases, and the diagnostic information of different imaging methods. The basic principles are the cost-effectiveness, and the risk-benefit ratio, ionizing radiation, radiation protection, and the ALARA principle.

Of course the students have to learn the different indications, contraindications, possible side effects of the imaging methods, basics of the vascular and non-vascular interventional radiology and the appropriate answer for the exam questions. After the course the students as a practitioner with a help of the known clinical data will be able to draw up the application sequence (examination shift) of the picture making diagnostic methods required for the diagnosis of certain diseases (in case of need based on the consultation with the specialist).

### Conditions for acceptance of the semester

To get the index book signed, a maximum of 2 (two) seminars (4 hours) may be missed and they are not replaceable by any kind, even by participating in other seminars, since the subjects may go non-parallel in various groups. Missed seminars, caused by disease, can be certified by a written certificate obtained from the treating physician (booked in the log of his/her office)! This can be done at the next seminar on the forthcoming week.

### Making up for missed classes

No possibility for the replacement.

### Reading material

In English:

-R. B. Gunderman: Essential Radiology. Thieme, 2006

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

-S. Francis, A. F. Watkinson (Department of Radiology The Royal Free Hospital, London, UK): Interventional Radiology explained. REMEDICINA Publishing, 2000.

In Hungarian:

-Fráter, Palkó, Makó, Kollár, Battayáni: Radiológia (Medicina, 2007)

Recommended:

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

### Lectures

1. Basic physics of radiation (dosages, image quality)
2. Ultrasonography, CT
3. MRI., Contrast materials and their application (reaction and side effects).
4. Radioisotops, and their applications
5. Chest diagnostic imaging methods. The examination methods of the lung, the necessary clinical informations, indications, contents of informations. Basic terms, roentgen anatomy, basic findings. The normal and pathologic lung. Radiological diagnosis of the inflammatory lung diseases. Pneumonia. Lung abscess. Lung emboli. Benign and malignant lung tumors.
6. Tuberculosis. Degenerative lung diseases, fibrosis, coniosis. Pleural diseases, hydrothorax, pneumothorax. Benign and malignant lung tumors. The abnormality of the diaphragm.
7. Imaging methods of the GI tract, necessary clinical informations, indications. Radiology of the oesophagus, stomach and duodenum. The relation of the endoscopic and radiologic methods. Imaging methods of the small bowel and the large bowel, their indications, the necessary clinical informations. Diseases and their radiological diagnosis.
8. Imaging methods of the liver and biliary system. Diagnostic strategies of different diseases. Necessary clinical informations. Pancreas, retroperitoneum, spleen (imaging methods, indications, clinical informations).The possibilities if the interventional radiology. The acute abdomen.
9. Imaging of the urinary system (kidney, adrenal gland, ureter, urinary bladder). Indications, clinical informations, differential diagnosis. Interventinal radiology of the urinary tract.
10. Imaging of the bones and joints. Imaging of the facial bones. Inflammatoric diseases of the bone and joins. Benign and malignant tumors
11. Interventional radiology in the vascular system (embolisation, selective blood sampling, foreign body removal, thrombolysis, thrombus aspiration, catheter therapy in atherosclerosis. stents.)Interventional oncoradiology. Tissue sampling.
12. Radiation protection.

13. Biology of the radiation. Planning of radiotherapy. Curative, palliative methods. The relation between cytostatic treatment and radiation.
14. Maxillofacial malignancies. Radiology of the maxillofacial region (trauma, inflammatory diseases, tumors)

#### *Practices*

1. Basic physics of radiation (dosages, image quality)
2. Ultrasonography, CT
3. MRI., Contrast materials and their application (reaction and side effects).
4. Radioisotopes, and their applications
5. Chest diagnostic imaging methods. The examination methods of the lung, the necessary clinical informations, indications, contents of informations. Basic terms, roentgen anatomy, basic findings. The normal and pathologic lung. Radiological diagnosis of the inflammatory lung diseases. Pneumonia. Lung abscess. Lung emboli. Benign and malignant lung tumors.
6. Tuberculosis. Degenerative lung diseases, fibrosis, coniosis. Pleural diseases, hydrothorax, pneumothorax. Benign and malignant lung tumors. The abnormality of the diaphragm.
7. Imaging methods of the GI tract, necessary clinical informations, indications. Radiology of the oesophagus, stomach and duodenum. The relation of the endoscopic and radiologic methods. Imaging methods of the small bowel and the large bowel, their indications, the necessary clinical informations. Diseases and their radiological diagnosis.
8. Imaging methods of the liver and biliary system. Diagnostic strategies of different diseases. Necessary clinical informations. Pancreas, retroperitoneum, spleen (imaging methods, indications, clinical informations).The possibilities if the interventional radiology. The acute abdomen.
9. Imaging of the urinary system (kidney, adrenal gland, ureter, urinary bladder). Indications, clinical informations, differential diagnosis. Interventinal radiology of the urinary tract.
10. Imaging of the bones and joints. Imaging of the facial bones. Inflammatory diseases of the bone and joints. Benign and malignant tumors
11. Interventional radiology in the vascular system (embolisation, selective blood sampling, foreign body removal, thrombolysis, thrombus aspiration, catheter therapy in atherosclerosis. stents.)Interventional oncoradiology. Tissue sampling.
12. Radiation protection.
13. Biology of the radiation. Planning of radiotherapy. Curative, palliative methods. The relation between cytostatic treatment and radiation.
14. Maxillofacial malignancies. Radiology of the maxillofacial region (trauma, inflammatory diseases, tumors)

#### *Seminars*

##### *Exam topics/questions*

1. Generation of X-ray.
2. The differential absorption and its role in diagnostic and in therapeutic medicine.
3. Compton dispersion, pair formation.
4. Features of X-ray.
5. The units of the diagnostic x-ray equipment.
6. Magnetic resonance imaging.
7. The basic principles of x-ray imaging.
8. Contrast materials, their side effects, complications and treatments.
9. The biological effect of radiation.
10. Genetic effects of radiation. Radiation protection.
11. Imaging of the bone and joint. Basic pathologic changes.
12. Imaging and diseases of the facial bones.
13. Indications and methods of chest X-ray
14. X-ray signs of lung diseases.
15. Indications and methods in pleural diseases.
16. Imaging methods of the heart and great vessels.
17. Imaging methods of the mediastinum.
18. Radiological examinations of the GI tract. Basic morphological changes.
19. Imaging methods of the liver and biliary tract. Basic changes. Radiology of the pancreas.
20. Uroradiology. (stones, tumors)
21. Basic principles and indications of angiography
22. Basic principles and indications of CT
23. Basic principles and indications of US
24. Radiation protection. Physical and biological basics of radiation therapy.
25. Planning of oncotherapy. Curative and palliative radiotherapy.
26. Radiotherapy in maxillofacial tumors. Side effects.
27. Diagnostic and therapeutic applications of the isotopes.

- 28. Local cytostatic treatment.
- 29. Transcatheter embolisation.
- 30. Local thrombolysis. PTA. Atherectomy. Stent implantation.

**OSPOFO OPERATIVE DENTISTRY - PROPEDEUTICS**

*Course director:*

**DR. EDINA LEMPEL**, assistant lecturer  
Dept. of Dentistry, Oral-, Maxillofacial Surgery

**3 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6**

*Number of hours/semester:*           **28 lectures + 14 practices + 0 seminars = total of 42 hours**

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

*Prerequisites:*                       **see in the recommended curricula!**

*Topic*

*Conditions for acceptance of the semester*

*Making up for missed classes*

*Reading material*

*Lectures*

*Practices*

*Seminars*

*Exam topics/questions*

## OSPPA2 PATHOLOGY 2 - ORAL PATHOLOGY

Course director:

DR. LÁSZLÓ PAJOR, professor  
Department of Pathology

**7 credit • final exam • Pre-clinical module • spring semester • recommended semester: 6**

Number of hours/semester: **56 lectures + 0 practices + 42 seminars = total of 98 hours**

Headcount limitations (min-max.): **5 – 0**

Prerequisites: **see in the recommended curricula!**

### Topic

There is a special emphasis on the clinicopathological view of the diseases, i.e., understanding the interrelationship of the clinical symptoms, macroscopical and microscopical changes of the diseased organs. To this end, clinicopathological thinking and the capability of differential diagnostics are required by the end of the academic year. The systemic pathology subject involves the major fields of organ pathology: cardio-vascular pathology, lung pathology, gastroenterology, liver-biliary tract- and pancreas pathology, haematopathology, kidney disorders, male genital tract pathology, female genital tract and breast pathology, neuropathology, endocrine system disorders, skin-, skeletal system- and soft tissue pathology.

### Conditions for acceptance of the semester

According to the Code of Studies of Examination.

Absences exceeding 15% of the histopathology classes during the semester will result in not signing the gradebook.

### Making up for missed classes

None.

### Reading material

S. L. Robins, V. Kumar: Basic Pathology, 7th edition, Saunders Company, 2003, ISBN 0-7216-9274-5

### Lectures

1. I. Diseases of the heart and blood vessels (5 lectures; lecturer: Dr. L. Pajor)
2. 1. Ischemic heart diseases. Sudden cardiac death.
3. 2. Valvular disorders, myocarditis.
4. 3. Cardiomyopathies, tumours of the heart and pericardial disorders.
5. 4. Congenital heart diseases.
6. 5. Vasculitides. Vascular tumours. Diseases of the veins and the lymphatic system
7. II. Hematopathology (5 lectures; lecturer: Dr. Pajor)
8. 1. Ontogenesis of the lymphoid cells: pheno- and genotypic characteristics of the precursor and peripheral cell populations.
9. 2. Reactive lymph node changes: lymphadenitis, lymphadenopathies.
10. 3. The WHO classification of the tumors of haemopoietic and lymphoid tissues: basic principles and major categories.
11. 4. Non-Hodgkin and Hodgkin lymphomas
12. 5. Chronic myeloproliferative disorders (CMPDs)
13. 6. Myelodysplastic syndromes (MDS) and acute myeloid leukaemias (AML)
14. III. Pulmonology (6 lectures; lecturer: Dr. László)
15. 1. Anatomy and defence mechanism of the respiratory tract. Disorders of the upper respiratory tract. Inflammations, necrotising inflammations. Tumours of the nasal cavity and the pharynxes.
16. 2. Laryngeal oedema, tumours of the larynx. Disorders of the lower respiratory tract. Congenital anomalies. Disorders of vascular origin (thromboembolisation, infarction, pulmonary oedema, chronic congestion, IRDS, ARDS, atelectasis)
17. 3. The clinical characteristics of chronic obstructive disorders, types, morphology. Infectious lung diseases
18. 4. The general characteristics of chronic restrictive disorders, types, morphology.
19. 5. Tumours of the lung
20. 6. Pleural and mediastinal disorders
21. IV. Gastroenterology (6 lectures, lecturer: Dr. L. Pajor)
22. 1. Congenital malformations of face, inflammatory-tumor-like conditions and tumours of the oral cavity
23. 2. Inflammatory diseases and tumours of the salivary glands
24. 3. Congenital and acquired diseases of the oesophagus
25. 4. Pathology of the stomach
26. 5. Pathology of the small intestines
27. 6. Pathology of the colon and rectum
28. V. Liver - biliary tract - pancreas (6 lectures; lecturer: Dr L.Pajor)
29. 1. Circulatory disorders of the liver. Non-viral inflammations in the liver. Drug hepatopathies
30. 2. Acute viral hepatitis

31. 3. Chronic viral hepatitis
32. 4. Cirrhosis and hepatic failure
33. 5. Tumor-like conditions and true neoplasia of the liver.
34. 6. Pathology of the extrahepatic bile ducts and exocrine pancreas
35. VI. Male genital and urinary tract (3 lectures; lecturer: Dr. Kálmán)
36. 1. Renal neoplasms. Pathology of the bladder and ureter.
37. 2. Pathology of the testis and the appendices.
38. 3. Pathology of the prostate.
39. 4. Pathology of the penis.
40. VII. Female genital tract (7 lectures; lecturer: Dr. Kálmán)
41. 1. Pathology of the vulva and the vagina. Inflammatory lesions of the female genital tract and STD.
42. 2. Pathology of the cervix.
43. 3. Pathology of the uterine corpus.
44. 4. Pathology of the ovaries.
45. 5. Pathology of pregnancy. (Abnormalities of implantation. Gestosis, Trophoblastic tumours).
46. 6. Pathology of the breast
47. VIII. Neuropathology (6 lectures; lecturer: Dr. Gömöri)
48. 1. General characteristics of the cells of the central nervous system and their reactions to injury. Pathophysiological alterations of the central nervous system (edema of the brain, herniations, hydrocephalus)
49. 2. Malformations of the brain.
50. 3. Cerebrovascular disorders (focal and global ischaemic lesions, intracranial haemorrhage and hypertensive vascular lesions of the brain)
51. 4. Degenerative disorders and dementia (Alzheimer disease, Pick disease and Parkinson disease)
52. 5. Demyelination disorders: multiple sclerosis
53. 6. Infectious diseases of the CNS (bacterial infections, virus encephalitis, opportunistic infections, AIDS, parasitic and fungal infections).
54. 7. Prion disease
55. 8. Neuroepithelial tumours
56. 9. Meningiomas. Primary brain lymphoma, metastases of the brain
57. IX. Endocrinology and soft tissue lesions (4 lectures; lecturer: Dr. Tornóczy)
58. 1. Pathological conditions of the hypothalamo-hypophyseal system
59. 2. Pathology of the thyroid gland (developmental abnormalities, hyperplasia, thyroiditis)
60. 3. Pathology of the thyroid gland (tumours). Pathology of the parathyroid glands
61. 4. Pathology of the adrenal gland. MEN
62. 5. Pathogenesis of the soft tissue tumors. Fibrous, fibrohistiocytic neoplasms of the soft tissues.
63. 6. Tumors of the fat tissue, smooth- and striated muscle.
64. 7. Synovial neoplasms, tumors of the peripheral nerves.
65. X. Nephrology (5 lectures; lecturer: Dr. Kereskai )
66. 1. Renal failure
67. 2. Pathogenesis of glomerulonephritides
68. 3. Classification of glomerulonephritides
69. 4. Tubulointerstitial and vascular diseases
70. 5. Cystic diseases of the kidney. Nephrolithiasis
71. XI. Pathology of the skin and bones (3 lectures; lecturer: Dr. Pajor)
72. 1. Benign and malignant tumours of the skin, premalignant lesions
73. 2. Naevus - malignant melanoma
74. 3. Hereditary, inflammatory and metabolic bone diseases
75. 4. Benign and malignant bone tumours

#### Practices

#### Seminars

29. I. Diseases of the heart and blood vessels:
30. 1. Cardiology: ischemic heart disease: Aneurysma thrombotisatum ventriculi sinistri cordis/P/, Endocarditis: Endocarditis septica/P/, Endocarditis chronica - mitral stenosis/P/, Löffler's endocarditis/P/, Myocarditis: Acute rheumatic myocarditis (HE)/S/, Cardiomyopathies: Congestive cardiomyopathy/P/, Hypertrophic cardiomyopathy/P/, Hypertrophic cardiomyopathy (HE)/S/, Congenital heart diseases: Foramen ovale late apertum/P/, Roger's disease/P/, Ductus Botalli persistens/P/
31. 2. Diseases of the blood vessels: Degeneration: Dissecting aortic aneurysm/P/, Vasculitis: Luetic aortitis/P/, Arteritis temporalis (HE)/S/, Vascular tumors: Cavernous haemangioma of the liver/P/, Haemangioma cavernosum hepatis (HE)/S/, Kaposi sarcoma (HE)/S/
32. II. Hematopathology:

33. 3. Reactiv changes (lymph node): Lymphadenitis with small granulomas (Toxoplasma lymphadenitis) (HE)/S/, Infectious mononucleosis aspiration cytology (picture), flow cytometry, slide-demonstration, Lymphomas: Burkitt's lymphoma/P/, Lymphomatous polyposis of small and large intestine/P/, B-CLL, smear (HE)/S/, CLL liver-infiltration (HE)/S/, CLL crista biopsy demonstration (HE)/S/, CLL bone marrow (HE)/S/, Hodgkin's disease, MC (HE)/S/, Large B-cell lymphoma with Russel and Dutcher bodies (HE and PAS)/S/,
34. 4. Plasmacell dyscrasia: Multiple myeloma /P/, Multiple myeloma - bone marrow and kidney (kappa and lambda)/S/, Myeloproliferative disorders: CML - extreme splenomegaly/P/, CML, CP, smear (MGG)/S/
35. III. Pulmonology:
36. 5. Upper respiratory tract: Foreign body in bronchi/P/, Carcinoma of the larynx - supra- and subglottic involvement (2 preparations), Tracheobronchitis diphterica/P/, Pulmonary fibrosis, restrivtive disorders: BOOP (HE)/S/,
37. 6. Respiratory distress: IRDS, corrosion preparation Aspe, Hyalin membrane disease (PAS)/S/, Fungal and viral infections: Aspergillus of the lung (PAS)/S/, Pneumocystis carinii (Grocott, + HE - presentation)/S/
38. 7. Tumors: Bronchial carcinoma/P/, Microcellular carcinoma of the lung (HE)/S/, Planocellular carcinoma of the lung (HE)/S/, Bronchioloalveolar carcinoma (HE)/S/,
39. 8. Vasculitis, granulomatosis: Wegener granulomatosis (HE)/S/, Pleural disorders: Mesothelioma/P/
40. IV. Gastroenterology:
41. 9. Oral cavity, salivary glands: Pleiomorphic adenoma (HE)/S/, Esophagus: Esophageal diverticulum/P/, Achalasia/P/, Esophageal carcinoma/P/
42. 10. Stomach: Giant hypertrophic – Menetrier's gastritis/P/, Penetrating, chronic, ventricular ulcer (penetrating into pancreas)/P/, Exophyticly growing carcinoma of the stomach/P/, Pyloric carcinoma/P/, Helicobacter pylori infection (Whartin-Starry)/S/
43. 11. Small intestine: Crohn's disease/P/, Coeliakia - subtotal/total villus atrophy (Marsh 3c) (HE)/S/, Crohn disease (HE)/S/
44. 12. Large intestine: Colic diverticulosis/P/, Ulcerative colitis/P/, Rectal polyp with stalk/P/, Rectal adenocarcinoma/P/, Carcinoid of the appendix (HE)/S/, Rectal adenocarcinoma (HE)/S/
45. V. Liver - biliary tract - pancreas: 13. Liver: Congenital disorders: Polycystic disease of liver and kidney/P/, Fibropolycystic liver lesion (HE)/S/, Circulationl disturbances: Pylethrombosis/P/, Central haemorrhagic necrosis (Mock hepatitis) (HE)/S/, Non hepatotrop infectious diseases: Echinococcus cysts in the liver/P/, Hepatotrop infectious disorders: Atrophia hepatis flava/P/, Postnecrotic, macronodular cirrhosis/P/, HBs-antigen positivity (HE and Shikata)/S/
46. 14. Alcoholic liver diseases: Alcoholic hepatitis (HE)/S/, Tumors: Focal nodular hyperplasia/P/, Hepatocellular carcinoma and cirrhosis/P/, Hepatocellular carcinoma in cirrhosis (HE)/S/, Gallbladder: Cholecyst adenocarcinoma with multiple liver metastases/P/, Pancreas: Pancreas carcinoma/P/
47. VI. Male genital tract:
48. 15. Prostate: Prostatic hyperplasia and vesica trabeculata /P/, Prostate adenocarcinoma/P/, Prostate adenocarcinoma (HE)/S/
49. 16. Testis and appendices: Chronic epididymitis. Hydrokele. Atrophia of the testes./P/, Mixed germ-cell tumor; seminoma and teratoma/P/, Seminoma (HE)/S/, Mixed germ cell tumor Teratoma and Embryonal carcinoma (HE)/S/, Penis: Penal carcinoma/P/
50. VII. Female genital tract:
51. 17. Vulva: Carcinoma of the vulva/P/, Cervix and uterus: Uterus bicornis/P/, Acute cervicitis/P/, Carcinoma of the cervix/P/, Endometrial polyp/P/, Carcinoma of the uterine corpus/P/, Uterine leiomyoma /P/, Endometrial adenocarcinoma (curettage) (HE)/S/
52. 18. Diseases of the tuba: Tuboovarial abscess /P/, Serous papillary adenocarcinoma of Fallopian tube/P/
53. 19. Cysts and tumors of the ovaries: Mucinous, multilocular cystadenoma of the ovary/P/,
54. 20. Breast Pathology: Fibroadenoma of the breast/P/, Carcinoma of the breast/P/, Mastitis carcinomatosa/P/, Paget - disease/P/, Intraductal papilloma (HE)/S/, Paget-disease (HE)/S/,
55. VIII. Neuropathology:
56. 21. Cerebral vascular disorders: Hydrocephalus internus, Ependymoblastoma/P/, Cerebral purpura/P/, Duret haemorrhage, haematocephalus/P/, Infections: cerebral abscess /P/ Prion disease, spongiform encephalopathy (HE)/S/, Demyelinisation: Multiple sclerosis/P/
57. 22. Tumors: Meningioma/P/, High grade astrocytoma/P/, Brainstem glioma/P/,
58. IX. Endocrinology and soft tissue lesions:
59. 23. Endocrinology: Craniopharyngeoma/P/, Suprarenal cortical adenoma/P/, Papillary carcinoma of the thyroid gland/P/, Subacut granulomatous thyroiditis (De Quervain) (HE)/S/, Papillary carcinoma of the thyroid (HE)/S/, Parathyroid adenoma (HE)/S/, Graves disease (HE)/S/,
60. 24. Soft tissue pathology: Leiomyosarcoma (HE)/S/, Myxoid liposarcoma (HE)/S/, GIST (HE)/S/
61. X. Nephrology and urinary tract pathology:
62. 25. Nephropathology: congenital anomalies: Polycystic kidney (infantile sponge kidney)/P/,
63. 26. Uropathology: Urothelial carcinoma of the bladder/P/, Urothelial carcinoma of the pyelon (HE)/S/
64. XI. Pathology of the skin and bones:
65. 27. Pathology of the skin: Melanoma of the eye/P/, Malignant melanoma with metastases/P/, Turban tumor/P/
66. 28. Bone pathology: Osteogenesis imperfecta/P/, Osteogenic sarcoma/P/, Chondrosarcoma/P/, Osteogenic sarcoma - radiologic picture, Osteoclastoma - radiologic picture, Giant cell tumor of bone (osteoclastoma) (HE)/S/,

67. 1. Developmental disorders of the jaws, teeth and soft tissues: Abnormalities of teeth: alteration in number, shape, size and eruption. Structural disorders.
68. 2. Odontogenic infections, dental focus. Congenital and mature deformations. Pulp inflammations, periapical disorders, the spread of infections in the jaws, in the soft tissues, cranial and mediastinal complications. Odontogenic inflammations of maxillary sinus. Defects and abnormalities of enamel and dentin, disturbances of cement production. Abnormalities of dental pulp. Alterations in color.
69. 3. Pathomechanism of periodontal diseases and temporomandibular joint disorders. Clinical examination of the periodontium, gingivitis, hyperplasia gingivae, parodontitis, atrophy parodontii. TMJ forming, congenital and developmental disorders, mechanical injuries, joint inflammations, degenerative conditions, ankylosis. Joint disfunctions.
70. 4. Inflammatory diseases of oral mucosa. Stomatitis aphthosa, stomatitis herpetica, herpes labialis, mononucleosis infectiosa.
71. 5. Inflammatory diseases of the oral mucosa. Stomatitis aphthosa, stomatitis herpetica, herpes labialis, infectious mononucleosis.
72. 6. Non-infective inflammatory diseases of the oral mucosa, actinomycosis, candidiasis, Pemphigus vulgaris, Wegener granulomatosis, Crohn's disease.
73. 7. Role of the HPV subtypes in the pathogenesis of oral cancer.
74. 8. Precancerous states. Leukoplakia and its differential diagnostics. Benign epithelial oral neoplasms.
75. 9. Malignant epithelial and non-epithelial tumours of the oral cavity.
76. 10. Inflammatory diseases of the salivary glands: sialoadenitis. Sialolithiasis, Mikulicz syndrome.
77. 11. Tumour-like lesions of the oral mucosa and the salivary glands.
78. 12. Benign tumours of the salivary gland.
79. 13. Malignant salivary gland tumours.
80. 14. Mesenchymal tumours of the oral cavity. Neoplastic and non-neoplastic diseases of the jaws. Odontogenic and non-odontogenic cysts. Odontogen tumours.

#### *Exam topics/questions*

##### Lectures

#### I. Diseases of the heart and blood vessels (5 lectures; lecturer: Dr. L. Pajor)

1. Ischemic heart diseases. Sudden cardiac death.
  2. Valvular disorders, myocarditis.
  3. Cardiomyopathies, tumours of the heart and pericardial disorders.
  4. Congenital heart diseases.
  5. Vasculitides. Vascular tumours. Diseases of the veins and the lymphatic system
- (The remaining topics have been discussed in different chapters of general pathology)

#### II. Hematopathology (5 lectures; lecturer: Dr. Pajor)

1. Ontogenesis of the lymphoid cells: pheno- and genotypic characteristics of the precursor and peripheral cell populations.
2. Reactive lymph node changes: lymphadenitis, lymphadenopathies.
3. The WHO classification of the tumors of haemopoietic and lymphoid tissues: basic principles and major categories.
4. Non-Hodgkin and Hodgkin lymphomas
5. Chronic myeloproliferative disorders (CMPDs)
6. Myelodysplastic syndromes (MDS) and acute myeloid leukaemias (AML)

#### III. Pulmonology (6 lectures; lecturer: Dr. László)

1. Anatomy and defence mechanism of the respiratory tract. Disorders of the upper respiratory tract. Inflammations, necrotising inflammations. Tumours of the nasal cavity and the pharynges.
2. Laryngeal oedema, tumours of the larynx. Disorders of the lower respiratory tract. Congenital anomalies. Disorders of vascular origin (thromboembolisation, infarction, pulmonary oedema, chronic congestion, IRDS, ARDS, atelectasis)
3. The clinical characteristics of chronic obstructive disorders, types, morphology. Infectious lung diseases
4. The general characteristics of chronic restrictive disorders, types, morphology.
5. Tumours of the lung
6. Pleural and mediastinal disorders

#### IV. Gastroenterology (6 lectures, lecturer: Dr. L. Pajor)

1. Congenital malformations of face, inflammatory changes, tumor-like conditions and tumours of the oral cavity
  2. Inflammatory diseases and tumours of the salivary glands
  3. Congenital and acquired diseases as well as tumors of the oesophagus.
  4. Pathology of the stomach
  5. Pathology of the small intestines
  6. Pathology of the colon and rectum
- V. Liver - biliary tract - pancreas pathology (6 lectures; lecturer: Dr L.Pajor)
1. Circulatory disorders of the liver. Non-viral inflammations in the liver. Drug hepatopathies
  2. Acute viral hepatitis
  3. Chronic viral hepatitis
  4. Cirrhosis and hepatic failure
  5. Tumor-like conditions and true neoplasia of the liver.
  6. Pathology of the extrahepatic bile ducts and exocrine pancreas
- VI. Male genital and urinary tract (3 lectures; lecturer: Dr. Kálmán)
1. Pathology of the bladder and ureter.
  2. Pathology of the testis and the appendices.
  3. Pathology of the prostate.
  4. Pathology of the penis.
- VII. Female genital tract (7 lectures; lecturer: Dr. Kálmán)
1. Pathology of the vulva and the vagina. Inflammatory lesions of the female genital tract and STD.
  2. Pathology of the cervix.
  3. Pathology of the uterine corpus.
  4. Pathology of the ovaries.
  5. Pathology of pregnancy. (Abnormalities of implantation. Gestosis, Trophoblastic tumours).
  6. Pathology of the breast
- VIII. Neuropathology (6 lectures; lecturer: Dr. Gömöri)
1. General characteristics of the cells of the central nervous system and their reactions to injury. Pathophysiologic alterations of the central nervous system (edema of the brain, herniations, hydrocephalus)
  2. Malformations of the brain.
  3. Cerebrovascular disorders (focal and global ischaemic lesions, intracranial haemorrhage and hypertensive vascular lesions of the brain)
  4. Degenerative disorders and dementia (Alzheimer disease, Pick disease and Parkinson disease)
  5. Demyelination disorders: multiple sclerosis
  6. Infectious diseases of the CNS (bacterial infections, virus encephalitis, opportunistic infections, AIDS, parasitic and fungal infections).
  7. Prion disease
  8. Neuroepithelial tumours
  9. Meningiomas. Primary brain lymphoma, metastases of the brain
- IX. Endocrinology and soft tissue lesions (4 lectures; lecturer: Dr. Tornóczy)
1. Pathological conditions of the hypothalamo-hypophyseal system
  2. Pathology of the thyroid gland (developmental abnormalities, hyperplasia, thyroiditis)
  3. Pathology of the thyroid gland (tumours). Pathology of the parathyroid glands
  4. Pathology of the adrenal gland. MEN
  5. Pathogenesis of the soft tissue tumors. Fibrous, fibrohistiocytic neoplasms of the soft tissues.
  6. Tumors of the fat tissue, smooth- and striated muscle.
  7. Synovial neoplasms, tumors of the peripheral nerves.
- X. Nephrology (5 lectures; lecturer: Dr. Kereskai )
1. Renal failure. Cystic diseases of the kidney.

2. Pathogenesis of glomerulonephritides.
3. Classification of glomerulonephritides
4. Tubulointerstitial and vascular diseases
5. Renal neoplasms

XI. Pathology of the skin and bones (3 lectures; lecturer: Dr. Pajor)

1. Benign and malignant tumours of the skin, premalignant lesions
2. Naevus - malignant melanoma
3. Hereditary, inflammatory and metabolic bone diseases
4. Benign and malignant bone tumours

Macropreparations and slides to be demonstrated and discussed:

Preparations

I. Cardiovascular system

1. Aneurysma thrombotisatum ventriculi sinistri cordis
2. Endocarditis septica
3. Endocarditis chronica - mitral stenosis
4. Löffler&#8217;s endocarditis
5. Congestive cardiomyopathy
6. Hypertrophic cardiomyopathy
7. Foramen ovale late apertum
8. Roger's disease
9. Ductus Botalli persistens
10. Dissecting aortal aneurysm
11. Luetic aortitis
12. Cavernous hemangioma of the liver

II. Hematopathology

13. Burkitt's lymphoma
14. Multiple myeloma
15. CML - extreme splenomegaly
16. Lymphomatous polyposis of small and large intestine

III. Pulmonology

17. Foreign body in bronchi (repetition)
18. Carcinoma of the larynx - supra- and subglottic involovment (2 preparations)
19. Tracheobronchitis diphterica
20. IRDS, corrosion preparation
21. Bronchiectasis
22. Bronchial carcinoma (repetition)
23. Mesothelioma

IV. Gastrointestinal pathology

24. Esophageal diverticulum
25. Achalasia
26. Esophageal carcinoma
27. Giant hypertrophic - Menetrier's gastritis
28. Penetrating, chronic, ventricular ulcer (penetrating into pancreas)
29. Exophyticly growing carcinoma of the stomach
30. Pyloric carcinoma
31. Crohn's disease

32. Colonic diverticulosis
33. Ulcerative colitis
34. Rectal polyp (repetition)
35. Rectal adenocarcinoma (repetition)

V. Hepatology, biliary system, pancreas

36. Polycystic disease of liver and kidney
37. Echinococcus cysts in the liver
38. Atrophia hepatis flava
39. Macronodular (postnecrotic) cirrhosis
40. Focal nodular hyperplasia
41. Hepatocellular carcinoma
42. Adenocarcinoma of the gall bladder with multiple liver metastases
43. Pancreas carcinoma

VI. Male genital and urinary tract

44. Urothelial carcinoma of the bladder
45. Prostate adenocarcinoma
46. Chronic epididymitis. Hydrokele. Atrophia of the testes.
47. Mixed germ-cell tumor; seminoma and teratoma
48. Penal carcinoma

VII. Female genital tract

49. Carcinoma of the vulva
50. Uterus bicornis
51. Acute cervicitis
52. Carcinoma of the cervix
53. Endometrial polyp
54. Carcinoma of the uterine corpus
55. Tuboovarial abscess
56. Mucinous, multilocular cystadenoma of the ovary
57. Thecofibroma of the ovary
58. Dermoid cyst (repetition)
59. Dysgerminoma
60. Hydatidiform mole
61. Fibroadenoma of the breast (repetition)
62. Carcinoma of the breast (repetition)
63. Mastitis carcinomatosa
64. Paget disease
65. Serous papillary adenocarcinoma of fallopian tube
66. Teratoma of the ovary (embryonal)

VIII. Neuropathology

67. Hydrocephalus internus, Ependyoblastoma
68. Cerebral purpura (repetition)
69. Secondary hemorrhage of the pons, hemocephalus
70. Meningioma
71. High grade astrocytoma
72. Brainstem glioma
73. Glioblastoma
74. Medulloblastoma
75. Multiple brain metastases
76. Cerebral atrophy (repetition)
77. Multiple sclerosis

IX. Endocrinology and soft tissue lesions

78. Craniopharyngeoma
79. Suprarenal cortical adenoma
80. Papillary carcinoma of the thyroid gland

#### X. Nephrology

81. Polycystic kidney (infantile sponge kidney)
82. Polycystic kidney (adult type)
83. Horseshoe kidney
84. Pyelonephritis abscedens. Necrosis of papilla.
85. Chronic pyelonephritis (repetition)
86. Nephrosclerosis
87. Hydronephrosis
88. Clear cell carcinoma of kidney
89. Oncocytoma
90. Wilms' tumor

#### XI. Pathology of the skeletal system and the skin

91. Melanoma of the eye
92. Malignant melanoma with metastases (repetition)
93. Turban tumor
94. Osteogenesis imperfecta
95. Osteogenic sarcoma
96. Chondrosarcoma
97. Osteogenic sarcoma - radiologic picture
98. Osteoclastoma - radiologic picture

#### Slides

##### I. Cardiovascular system

1. Acute rheumatic myocarditis (HE)
2. Hypertrophic cardiomyopathy (HE)
3. Arteritis temporalis (HE)
4. Haemangioma cavernosum hepatis (HE)
5. Kaposi sarcoma (HE)

##### II. Haematopathology

6. Toxoplasma lymphadenitis (HE)
7. CLL, smear (MG)
8. CLL liver-infiltration (HE)
9. CLL bone marrow (HE)
10. CLL crista biopsy demonstration (HE)
11. Hodgkin's disease, MC (HE)
12. Multiple myeloma & kidney (HE)
13. CML, CP, smear (MG)
14. Large B-cell lymphoma with Russel and Dutcher bodies (HE and PAS)
15. Infectious mononucleosis aspiration cytology (picture), flow cytometry

##### III. Respiratory system

16. BOOP (HE)
17. Hyaline membrane disease (PAS)
18. Aspergillosis of the lung (HE, PAS)

19. Pneumocystis carinii (Grocott)
20. Wegener granulomatosis (HE)
21. Microcellular carcinoma of the lung (HE)
22. Planocellular carcinoma of the lung (HE)
23. Bronchioloalveolar carcinoma (HE)

#### IV. Gastrointestinal pathology

24. Pleiomorphic adenoma (HE)
25. Helicobacter pylori infection (Whartin-Starry)
26. Coeliakia &#8211; subtotal/total villus atrophy (Marsh 3c) (HE)
27. Crohn disease (HE)
28. Carcinoid of the appendix (HE)
29. Rectal adenocarcinoma

#### V. Hepatology, biliary system, pancreas

30. Fibrocystic liver lesion (HE).
31. Central hemorrhagic necrosis (HE)
32. HBs-antigen positivism (Shikata-orcein)
33. Alcoholic hepatitis (HE)
34. Hepatocellular carcinoma in cirrhosis (HE)

#### VI. Male genital and urinary tract

35. Urothelial carcinoma of the pyelon (HE)
36. Prostatic adenocarcinoma (HE)
37. Seminoma (HE)
38. Mixed germ cell tumor: teratoma and embryonal carcinoma (HE)

#### VII. Female genital tract

39. Endometrial adenocarcinoma (curettage) (HE)
40. Serous papillary cystadenocarcinoma of the ovary (HE)
41. Hydatidiform mole (HE)
42. Intraductal papilloma (HE)
43. Paget-disease (HE)
44. Invasive ductal carcinoma (HE)
45. Mucinous carcinoma (HE)

#### VIII. Neuropathology

46. Prion disease, spongiform encephalopathy (HE)
47. Meningoendothelial meningioma (HE)
48. Ependymoma (HE)
49. Glioblastoma (HE)
50. Senile plaques and neurofibrillar degeneration in hippocampus (Silver impregnation)

#### IX. Endocrinology and soft tissue lesions

51. Subacute granulomatous thyroiditis (De Quervain) (HE)
52. Papillary carcinoma of the thyroid (HE)
53. Graves disease (HE)
54. Parathyroid adenoma (HE)
55. Pheochromocytoma (HE)
56. Leiomyosarcoma (HE)
57. Myxoid liposarcoma (HE)
58. GIST (HE)

## X. Nephropathology

59. Rapidly progressive GN with crescents (HE)
60. Hyalinised glomeruli (HE)
61. Kimmelstiel Wilson syndrome (PAS)
62. Clear cell carcinoma of the kidney (HE)

## XI. Pathology of the skeletal system and the skin

63. Giant cell tumor of bone (osteoclastoma) (HE)
64. SSM

## Exam questions

### Selected exam questions of Pathology I.

#### I. Introduction - Postmortem changes - cell death

1. The objectives of pathology and its place among the biomedical disciplines. Significance of biopsy (surgical pathology) and autopsy in the everyday medical practice. Brief summary of the historical development of pathology (humoral- and solidarpathology, Morgagni, Virchow, molecular pathology)
2. Clinicopathology of the acute myocardial infarction

#### II. Degeneration, pathological accumulation, pigments, calcification

1. Pathogenesis, pathomorphology and complications of atherosclerosis
2. Hemoglobinogenic pigments I. Different forms of jaundice and cholestasis, morphology, differential diagnostics.
3. Hemoglobinogenic pigments II. Pathological forms of iron storage.
4. Definition and general characterisation of amyloidosis. Physico-chemical, ultrastructural and histochemical nature of amyloid. The chemical forms of amyloid fibrils.
5. Clinico-pathological forms of amyloidosis, organ manifestation (gross morphology and light microscopy)

#### III. Growth disturbances

1. Osteoporosis
2. Left ventricular hypertrophy. Causes, sequential compensatory changes and functional consequences.
3. Cor pulmonale chronicum.
4. Healing by primary and secondary intention (Sanatio per primam et per secundam intentionem). Organ examples.

#### IV. Thrombosis, embolism, edema, hemorrhages

1. Disseminated intravascular coagulation (DIC): definition, pathomechanism, complications.
2. Clinicopathological forms of hypertension and its complications.

#### V. Inflammation

1. Vascular, humoral and cellular mechanisms of acute inflammations
2. Pathogenesis, pathomorphology and clinicopathology of tuberculosis
3. Autoimmune chronic inflammations. Rheumatoid arthritis

#### VI. Immunopathology

1. Systemic lupus erythematosus (SLE)
2. Acquired immunodeficiency syndrome (AIDS)

#### VII. Genetics

1. Marfan and Ehlers Danlos syndromes
2. Familial hypercholesterinaemia

3. Cystic fibrosis
4. The lysosomal storage disorders, glycogenoses, mucopolysaccharidoses.

#### VIII. Oncology

1. General characteristics of benign and malignant tumours. Terminology and histogenetic classification and of tumours.
2. Oncopathological diagnostic strategy, grading, staging

#### Pathology 2 EQs

##### I. Cardiovascular system

1. Angina pectoris, chronic ischemic heart disease, sudden cardiac death.
2. Pathology of the valvular disorders (inflammatory and degenerative ones).
3. Cardiomyopathies. Tumors and tumor-like conditions of the heart.
4. Myocarditis. Pathology of the pericardium.
5. Congenital heart diseases.
6. Arteriolosclerosis. Types and clinicopathology of the aneurysms.
7. Pathogenesis, classification and clinicopathology of vasculitides. Vascular tumours.

##### II. Hematopathology

8. The WHO classification of the tumors of haemopoietic and lymphoid tissues: basic principles and major categories.
9. Non-Hodgkin B-cell lymphomas.
10. Hodgkin lymphomas: pathogenesis, morphology and clinicopathology.
11. T/NK cell lymphomas.
12. Classification of myelodysplastic syndromes and acute myeloid leukaemias.
13. Chronic myeloproliferative disorders (CMPDs). Clinicopathology and molecular pathogenesis of CML
14. Lymphadenitis and lymphadenopathies.

##### III. Respiratory system

15. Non-tumorous disorders (rhinitis, sinusitis, rhinoscleroma, necrotising inflammation) and tumors of the upper airways
16. Laryngeal oedema. Laryngitis. Tumours of the larynx.
17. Congenital anomalies of the lungs, atelectasis. IRDS.
18. General characteristics and types of chronic obstructive lung diseases.
19. Chronic restrictive lung diseases: general characteristics, etiological classification
20. Characteristics of interstitial lung disease with unknown aetiology, types.
21. Pneumonias, pulmonary abscess. Granulomatous diseases of lung. ARDS
22. Characterisation and classification of lung tumours
23. Pleural and mediastinal disorders

##### IV. Gastrointestinal tract

24. Developmental malformations of the face. Inflammatory and tumorous diseases of the oral cavity.
25. Pathology of the salivary glands. Odontogenic tumours
26. Diseases of the oesophagus
27. Inflammatory and ulcerative disorders of the stomach.
28. The benign and malignant tumours of the stomach
29. Malformations of the small intestine. Malabsorption.. Tumors of the small intestine.
30. Diverticulosis of the colon. Pathology of intestinal polyps.
31. Crohn's disease and ulcerative colitis
32. Colorectal malignancies and their relationship to polypous lesions.
33. Diseases of the appendix and the peritoneum (appendicitis, mucocele, peritonitis, retroperitoneal sclerosis, pseudomyxoma of the peritoneum).

##### V. Hepatology, biliary system, pancreas

34. Hepatic lesions caused by circulatory disorders. Non-viral inflammatory diseases of the liver. Drug-hepatopathies
35. Acute viral hepatitis (aetiology, pathomorphology, complicated forms)
36. Chronic hepatitis (aetiology, types; pathomorphology and differential diagnostics, detection of virus associated antigens and their significance)
37. Cirrhosis and hepatic failure.
38. Tumours and tumor-like conditions of the liver.
39. Cholelithiasis (aetiology and complications) and pathology of the biliary tract.
40. Acute and chronic pancreatitis. Tumours of the pancreas

#### VI. Male genital and urinary tract

41. Cystitides, tumours of the bladder and ureter
42. Congenital malformations, inflammations and tumors of the penis
43. Prostatitides. Hyperplasia of the prostate, complications
44. Tumours of the prostate
45. Congenital abnormalities and inflammatory diseases of the testes
46. Pathology of the appendices of the testis (epididymis, spermatic cord) Tumours of the gonadal stroma and secondary tumours.
47. Testicular germ cell tumours, classification, tumour markers

#### VII. Female genital tract

48. Vulvovaginitides. (Syphilis. Gonorrhoea. Lymphogranuloma venereum, HSV, HPV) PID.
49. Benign epithelial lesions of the vulva. Tumors of the vulva and vagina.
50. Inflammations, tumourlike lesions and tumours of the cervix. Carcinoma of the cervix (pathogenesis, pathomorphology, screening).
51. Adenomyosis and endometriosis. Dysfunctional bleedings. Endometrial hyperplasia. Endometritises.
52. Epithelial benign und malignant tumours of the uterine corpus.
53. Mesenchymal tumours of the uterine corpus. Diseases of the tuba.
54. Cysts and tumours of the ovaries (surface epithelial, germ cell, sex cord-stromal tumours, metastases.
55. Pathology of pregnancy (implantation disorders, gestosis, trophoblastic tumours).
56. Mastitides (lactational, ductus ectasia, fat necrosis, galactocele). Mastopathies (fibrocystic change). Fibroepithelial tumours.
57. Breast carcinoma. Pathogenesis, types, prognosis.

#### VIII. Neuropathology

58. General characteristics of the cells of the central nervous system and their reactions to injury. Pathophysiologic alterations of the central nervous system (oedema of the brain, herniations, hydrocephalus). Malformations of the brain.
59. Cerebrovascular disorders I. (focal and global hypoxic lesions, haemorrhages, hypertensive brain lesions)
60. Degenerative disorders of the CNS and dementia (Alzheimer, Pick and Parkinson disease).
61. Demyelination disorders: Multiple sclerosis
62. Infectious diseases of the CNS I. (bacterial, viral and fungal infections, disorders)
63. Prion disease
64. Neuroepithelial tumours of the CNS I. (glial, neuronal and embryonal /medulloblastoma/ tumours)
65. Meningiomas. Primary brain lymphoma, metastases of the brain

#### IX. Endocrinology and soft tissue lesions

66. Anterior lobe pituitary tumours and their consequences. Posterior lobe syndromes. Disorders associated with hypopituitarism (Sheehan's syndrome, chromophobic adenoma, empty sella syndrome, suprasellar tumours)
67. Inflammatory, tumorous diseases as well as disorders associated with hyperplasia of the thyroid gland.
68. Pathology of the parathyroid glands (hyperplasia, adenoma, causes of hypoparathyroidism). Multiplex endo

## **OSPSR SURGICAL PROPAEDEUTICS**

Course director:

DR. GÁBOR MENYHEI, professor

**3 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6**

*Number of hours/semester:* **28 lectures + 14 practices + 0 seminars = total of 42 hours**

*Headcount limitations (min-max.):* **2 – 20**

*Prerequisites:* **see in the recommended curricula!**

### *Topic*

The subject provides an overview of basic principles in general, vascular and orthopedic surgery and intensive therapy. The lectures deal with the diagnosis and treatment of the most important diseases. During practises basic examination methods are practised and discussed.

### *Conditions for acceptance of the semester*

Questioning: oral examination.

### *Making up for missed classes*

According to consultation with practice leaders.

### *Reading material*

AH Kaye, J. Smith: Textbook of Surgery, Blackwell Company; 2006, ISBN: 1405126272

### *Lectures*

1. History of surgery, asepsis, antisepsis
2. Indication in surgery, assessment of risk, basic principles in operating theatre
3. Wound healing
4. Principles of wound management, first aid
5. Surgical infections
6. Antibiotics in surgery
7. Principles of anaesthesia
8. Types of anaesthesia
9. Preoperative assessment and management
10. Intensive therapy, resuscitation, shock management
11. Principles of trauma management I.
12. Principles of trauma management II.
13. Pulmonary surgery
14. Non-pulmonary thoracic surgery
15. Acute diseases of veins
16. Chronic diseases of veins and lymphatics
17. Vascular surgery: Occlusive diseases. Diagnosis and management
18. Carotid stenosis and arterial aneurysms
19. Surgery of liver
20. Surgery of gallbladder and bile ducts
21. Surgery of thyroid and parathyroid glands
22. Diseases of breast
23. Surgery of oesophagus, stomach and duodenum
24. Surgery of pancreas and spleen
25. Diseases of small and large bowels
26. Diseases of rectum and anus
27. Surgery of acute abdomen
28. Principles in oncology. Diagnostics and management

### *Practices*

1. General Surgery Dr. Mátrai Gábor
2. General Surgery Dr. Mátrai Gábor
3. General Surgery Dr. Mátrai Gábor
4. Intensive Therapy Dr. Verzár Zsófia
5. Intensive Therapy Dr. Verzár Zsófia
6. Traumatology Dr. Vámhidy László
7. Vascular Surgery Dr. Benkő László
8. Vascular Surgery Dr. Benkő László
9. General Surgery Dr. Orbán Lajos
10. General Surgery Dr. Orbán Lajos

11. General Surgery Dr. Orbán Lajos
12. General Surgery Dr. Jancsó Gábor
13. General Surgery Dr. Hardi Péter
14. General Surgery Dr. Hardi Péter

*Seminars*

*Exam topics/questions*

According to lecture topics.

## **OSPSZP ORAL SURGERY: BASICS**

Course director:

**DR. LAJOS OLASZ**, professor  
Dept. of Dentistry, Oral-, Maxillofacial Surgery

**2 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6**

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

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

*Prerequisites:* **see in the recommended curricula!**

### *Topic*

The aim of this subject is to introduce the fundamentals of oral and maxillofacial surgery, especially dental local anesthesia and tooth extractions.

Exercising dental local anesthetic methods and to become experienced in daily tooth extractions.

### *Conditions for acceptance of the semester*

According to the Code of Studies and Examinations.

### *Making up for missed classes*

No possibility.

### *Reading material*

Stanley F. Malamed: Local anesthesia (1990), Mosby, Larry J. Peterson, Edward Ellis III, James R. Hupp, Myron R. Tucker: Oral and Maxillofacial Surgery (1998)

### *Lectures*

1. Principles of dentoalveolar surgery and the relationship with dental practice
2. Maxillofacial clinical anatomy
3. Principles of asepsis and antisepsis
4. Instrumentation of an clinical oral surgery practice
5. Clinical pharmacology of local anesthesia, physiology of pain
6. Local anesthetic methods in the maxilla.
7. Local anesthetic methods in the mandible
8. Extraoral anesthetic methods, the complications of local anesthesia
9. Typical tooth extractions (using forceps).
10. Instructions and motivating after extractions
11. General systemic diseases in dental practice
12. Prevention and management of medical emergencies in the dental chair
13. Antibiotic prophylaxis and therapy
14. The role of diagnostic methods making diagnosis

### *Practices*

1. 14. To get experience in dental routine anesthesia and extracting more than 30 teeth

### *Seminars*

#### *Exam topics/questions*

1. Asepsis in dental practice. (Disinfection, sterilization and aseptic methods.)
2. The kind of local anesthetic solutions and their pharmacology.
3. The equipment of local anesthesia.
4. Armamentarium for basic oral surgery.
5. Typical tooth extractions.
6. The pharmacology of antibiotics.
7. The complications of dental local anesthesia.
8. Maxillofacial anatomy and the fundamentals of oral surgery.
9. Antibiotic prophylaxis.
10. Type of elevators.
11. The physiology of pain.
12. Anatomy of maxillary nerve (V/2).
13. Extraoral anesthetic methods.
14. Anesthetic methods of maxillary teeth.
15. Extraction forceps.
16. Anesthetic methods of mandibular teeth.
17. Specification for the use of elevators.
18. The anatomic property of the teeth by extraction.

19. Frequent general systemic diseases in dental practice.
20. Instructions and motivating after extractions.
21. The armamentarium for tooth removing.
22. Disinfection and sterilization in clinical practice.
23. Anatomy of mandibular nerve (V/3).
24. Anatomy of mandible and maxilla.
25. The branches of carotid artery. (Art. carotis int. and ext.)
26. The connection between upper teeth and the maxillary sinus.
27. Anatomy of salivary glands.
28. Management of dental emergency.
29. The type of diagnostic methods making diagnosis in oral surgery.
30. The lymphatic system of head and neck.