University of Pécs
Medical School

DENTISTRY
Major

STUDY PROGRAM
2016/2017

Subjects of the Pre-clinical module
( obligatory subjects and criterion requirements)
### 5th semester

<table>
<thead>
<tr>
<th>Code</th>
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<td>Prosthodontics: Basics</td>
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<td>OSP-GNA</td>
<td>Gnathology</td>
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<td>OSP-KO1</td>
<td>Pathophysiology 1</td>
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<td>OSP-MI1</td>
<td>Microbiology 1</td>
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<td>Pathology for Dental Students 1</td>
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<td>OSP-SPR</td>
<td>Surgical Propaedeutics</td>
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### 6th semester

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<td>OSP-FL1</td>
<td>Prosthodontics 1</td>
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<td>OSP-KO2</td>
<td>Pathophysiology 2</td>
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<td>OSP-KRA</td>
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<td>OSP-OFO</td>
<td>Operative Dentistry - Propedeutics</td>
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<td>OSP-ORB</td>
<td>Oral Biology</td>
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<td>OSP-PA2</td>
<td>Pathology 2 - Oral Pathology</td>
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<td>OSP-SZP</td>
<td>Oral Surgery: Basics</td>
<td>58</td>
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<td>OSP-DAS</td>
<td>Dento-alveolar Surgery - Summer Practice</td>
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</table>
Course director: Dr. Márti Mária RADNAI, professor
Department of Dentistry, Oral-, Maxillofacial Surgery

**Topic**

The aim of this course is to inform students about clinical and technological aspects of fixed partial dentures. Students have to practice the clinical and dental technical steps of crown and bridge fabrication. The course shows the possible mistakes of the procedures. They also learn how to take impression in the clinic.

**Conditions for acceptance of the semester**

Requirements for students

- Active participation on lectures and practices, based on the Study and Exam Regulations of the University,
- Attendance of lectures and practices is mandatory.
- Completion of the tasks in the laboratory
- The student receives marks for the practical tasks in the training laboratory. The average must be at least 2.0. If the student gets 3 or more failed marks during the semester for his/her practical work, then the semester can not be evaluated and accepted. The practical tasks, which are not finished, also considered as failed mark.
- Average of the marks of written or oral tests relating the theoretical knowledge which is necessary to carry out the practical work.
- Form of tests: oral test, written test, etc. If the test considered as failed, the student gets one opportunity to rewrite the test. If the student gets further failed mark, the semester/practice is not accepted, it can not be evaluated.
- If either of the above averages (for the practical work or the relating theory) does not reach 2.0 the end semester practical mark can not be evaluated and accepted, the student has to repeat the course.

Offered course mark: PTE TVSZ 2. §(15)

Consequences of coming late to the practice:

Students must come to the practice on time.

If a student is late three times, it is equal with one missing.

If a student comes more than 15 minutes late, it is regarded as an absence.

**Mid-term exams**

Two mto

**Making up for missed classes**

No possibility.

**Reading material**

- *Obligatory literature*
  
  

- *Literature developed by the Department*
  
  Lectures

- *Notes*

- *Recommended literature*
  
  **Lectures**

     
     Dr. Radnai Márta Mária
  2. Indications for making artificial crowns, classification of crowns.
     
     Dr. Radnai Márta Mária
  3. Main principles of tooth preparation.
     
     Dr. Radnai Márta Mária
4  Rotary instruments in prosthetic work.
   Dr. Marada Gyula
5  Methods of tooth preparation. Pulp protection.
   Dr. Radnai Márta Mária
6  Finish line, periodontal aspects of tooth preparation. Biologic width.
   Dr. Radnai Márta Mária
7  Precision impression methods.
   Dr. Radnai Márta Mária
8  Procedure of dental impressions. Sulcus enlargement.
   Dr. Radnai Márta Mária
9  Model preparation methods I.
   Dr. Radnai Márta Mária
10 Model preparation methods II.
    Dr. Radnai Márta Mária
    Dr. Radnai Márta Mária
12 Build up of destroyed tooth, materials and methods.
    Dr. Radnai Márta Mária
13 Provisional restorations, materials and methods.
    Dr. Radnai Márta Mária
14 WRITTEN TEST
    Dr. Radnai Márta Mária
15 Construction of cast metal crowns, clinical and laboratory steps I.
    Dr. Marada Gyula
16 Construction of cast metal crowns, clinical and laboratory steps II.
    Dr. Marada Gyula
17 Construction of resin faced and acrylic crowns, clinical and laboratory steps.
    Dr. Radnai Márta Mária
18 Construction of porcelain fused to metal crowns, clinical and laboratory steps.
    Dr. Radnai Márta Mária
19 Full ceramic systems.
    Dr. Marada Gyula
20 Construction full ceramic crowns, clinical and laboratory steps.
    Dr. Marada Gyula
21 Post and cores, indications, conditions, preparation. Types of post and cores, classification.
    Dr. Radnai Márta Mária
22 Prefabricated posts, types, indications.
    Dr. Radnai Márta Mária
23 Interim and definitive cementation of crowns. Removal of cemented crowns and bridges.
    Dr. Radnai Márta Mária
24 WRITTEN TEST
    Dr. Radnai Márta Mária
    Dr. Radnai Márta Mária
26 Requirements of bridges.
    Dr. Radnai Márta Mária
27 Procession of bridge construction, clinical and laboratory steps. Special bridges.
    Dr. Radnai Márta Mária
28 Infection control in prosthodontics. Shade selection.
    Dr. Radnai Márta Mária

Practices
1  Practising the handling of burs.
2  Preparation of a lower molar tooth for full metal crown.
3  Preparation of a lower premolar and molar tooth for a metal-ceramic crown.
4  Preparation of an upper incisor for a full ceramic crown.
5  Preparation of an upper canine and premolar tooth for a full ceramic and metal-ceramic crown.
6  Making a precision impression of the jaw and alginate antagonist impression of the upper arch. Fabricating a temporary bridge and crown.
7. Mounting the sectioned and antagonist model to the articulator. Making the wax pattern for a lower metal-ceramic bridge.
8. Making the wax pattern for a lower metal-ceramic bridge.
9. Students take a lower and upper anatomical impression and bite registration from each other. Making anatomical models and mount them to the articulator.
10. Students take a lower and upper anatomical impression and bite registration from each other. Making anatomical models and mount them to the articulator.
11. Students take a lower and upper anatomical impression and bite registration from each other. Making anatomical models and mount them to the articulator.
12. Students take a lower and upper anatomical impression and bite registration from each other. Making anatomical models and mount them to the articulator.
13. Making anatomical models and mount them to the articulator. Demonstration and practise of using a facebow.

Seminars

Exam topics/questions

1. Subject of prosthodontics, types of prosthetic appliances.
2. Consequences of tooth loss.
3. The aims of prosthetic rehabilitation.
4. Definition, classifications, indications and contraindications of crowns.
5. Characteristics of partial crowns, indications and contraindications.
6. Materials artificial crowns, and their characteristics.
10. Place of finish line compared to the marginal gingiva.
11. Different preparation-margin designs, advantages and disadvantages, indications.
15. Steps of abutment tooth preparation for full ceramic crowns.
17. Comparison of chemical and prosthetic abutment protective methods.
18. What do you have to check after completion of tooth preparation?
19. What are the typical failures during abutment preparation?
21. Core build up when the abutment tooth is severely damaged. Management of caries lesions on the abutment teeth.
22. Definition of impression, anatomic, precision impression.
23. Steps of precision impression taking with one phase method.
24. Steps of precision impression taking with two phase method
26. Factors influencing the accuracy of the impression, evaluation of the impression.
27. Aims of abutment protection.
29. Types of impression trays, requirements relating the trays.
31. Definition of the model, precision model.
32. Classification of models.
33. Materials for making a model, and their characteristics.
34. Technique of die and cast making in case of fixed partial dentures.
35. Classification of impression materials.
36. Materials of precision impression, and their characteristics.
37. Material of anatomic impression, and its characteristics.
38. Dental burs and their use.
40. Comparison of different impression methods.
41. Preparation for complete crowns. Cast metal crowns.
42. Veneered crowns. Resin faced crowns.
43. Veneered crowns. Porcelain fused to metal crowns.
44. Dental technical process of making Jacket crowns (resin).
45. Dental technical process of making full ceramic crown with platinum-foil method.
46. Porcelain laminate veneers, definition, indication, tooth preparation.
47. Shade selection, theory and praxis.
49. Procedure of definitive cementation of crowns.
50. Removal of crowns and bridges.
51. Value of the teeth from prosthetic aspect, their use as abutments.
52. Definition of bridges, parts of bridges, classification.
54. Functions of a bridge. Static, functional and aesthetic aspects.
55. Static, functional, biological and esthetic requirements of a bridge.
56. Indications and contraindications of fixed partial dentures.
57. Factors influencing the lifespan of bridges.
60. Try-in of crowns and bridges in the dental-surgery.
61. Procedure of investing and casting.
62. Special bridges (removable bridges, adhesive bridges).
63. Alloys for cast metal crowns, and their properties.
64. Alloys for porcelain fused to metal crowns, and their properties.
65. Systems for full ceramic crowns and their processing.
66. Materials, armamentarium and steps of crown and bridge fixation.
67. Classification of post retained prosthetic appliances, indications and contraindications.
68. Indirect and direct methods for making a post-and-core.
69. Types and application of prefabricated metal posts.
70. Types and application of prefabricated non-metal posts.
71. Cementation of post-and-core.

Participants
Dr. Benke Beáta (BEBFAD0.PTE), Dr. Marada Gyula (MAGFABO.PTE), Dr. Muzsek Zsófia (MUZFACO.PTE), Dr. Radnai Mária Mária (RAMVAAP.PTE), Dr. Rajnics Zsolt (RAZNABO.PTE)
**TOPIC**

The aim of the lectures is to acquire the knowledge of the anatomy and function of chewing apparatus. Students learn the types and use of articulators.

The aim of the practices is to learn the occlusal anatomy of the teeth, and to wax up the occlusal surfaces of premolar and molar teeth according to the technology of HC Lundeen in order the better understanding the occlusion and articulation movements. Students learn the types and use of articulators and face-bow.

**Conditions for acceptance of the semester**

Requirements for students

- Active participation on lectures and practices, based on the Study and Exam Regulations of the University,
- Attendance of lectures and practices is mandatory.
- Completion of the tasks in the laboratory
- The student receives marks for the practical tasks in the training laboratory. The average must be at least 2.0. If the student gets 3 or more failed marks during the semester for his/her practical work, then the semester can not be evaluated and accepted. The practical tasks, which are not finished, also considered as failed mark.
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- If either of the above averages (for the practical work or the relating theory) does not reach 2.0 the end semester practical mark can not be evaluated and accepted, the student has to repeat the course.

**Mid-term exams**

Két zh

**Making up for missed classes**

No possibility

**Reading material**

- **Obligatory literature**
  - C. McNeill: Science and Practice of Occlusion
  - MG: Occlusion in Restorative Dentistry
- **Literature developed by the Department**
  - Előadás
- **Notes**
- **Recommended literature**
  - J P Okeson: Management of TMJ Disorders and Occlusion

**Lectures**

1. Introduction to Gnathology and its significance in dentistry. Functional units involved in mastication. Anatomical terminology of the mouth
   Dr. Radnai Márta Mária
2. Morphology of osseous structures involved in mastication and the temporo-mandibular joint. Anatomical terminology of the mouth
   Dr. Marada Gyula
3. Masticatory muscles, their function and innervation
   Dr. Marada Gyula
4. Basics of occlusal anatomy of the teeth and dental arches
   Dr. Radnai Márta Mária
5 Occlusal contacts in central occlusion. Orientation in the oral cavity
    Dr. Radnai Márta Mária

6 WRITTEN TEST
    Dr. Radnai Márta Mária

7 Specific positions of the mandible
    Dr. Radnai Márta Mária

8 Mandibular movements, tooth guidance. Dynamics of occlusal relationships, border-movements, mandibular movement envelope
    Dr. Radnai Márta Mária

9 The process of chewing. Occlusal relations in natural dentition
    Dr. Radnai Márta Mária

10 Articulators (arcon, non-arcon types)
    Dr. Radnai Márta Mária

11 Mounting the casts in the articulator, articulator-programming, face-bow and its use
    Dr. Radnai Márta Mária

12 WRITTEN TEST
    Dr. Radnai Márta Mária

13 Modification of occlusion in adults. Christensen phenomenon
    Dr. Radnai Márta Mária

14 Theories of occlusion in artificial dentition
    Dr. Radnai Márta Mária

Practices

1 Introduction. Instruments and materials. Marking reference lines and points on the study cast and on the mounted lower cast. Marking the centric contacts on the upper mounted cast. Cutting off the occlusal surface of the mounted lower cast. Re-tracing the markings on the occlusal surface of the lower cast

2 Introduction. Instruments and materials. Marking reference lines and points on the study cast and on the mounted lower cast. Marking the centric contacts on the upper mounted cast. Cutting off the occlusal surface of the mounted lower cast. Re-tracing the markings on the occlusal surface of the lower cast

3 Forming mandibular buccal cones. Marking reference lines and points on the mounted upper cast. Cutting off the occlusal surface of the mounted upper cast

4 Forming mandibular buccal cones. Marking reference lines and points on the mounted upper cast. Cutting off the occlusal surface of the mounted upper cast

5 Re-tracing the occlusal surface of the upper cast. Re-tracing the markings on the occlusal surface of the upper cast. Forming maxillary buccal cones. Forming the buccal ridges of mandibular buccal cusps

6 Re-tracing the occlusal surface of the upper cast. Re-tracing the markings on the occlusal surface of the upper cast. Forming maxillary buccal cones. Forming the buccal ridges of mandibular buccal cusps

7 Forming the buccal ridges of maxillary buccal cusps. Shaping the triangular ridges of the maxillary buccal cusps

8 Forming the buccal ridges of maxillary buccal cusps. Shaping the triangular ridges of the maxillary buccal cusps

9 Forming the mesial and distal cusp ridges of the maxillary and mandibular buccal cusps

10 Forming the mesial and distal cusp ridges of the maxillary and mandibular buccal cusps

11 Forming the maxillary lingual cones and the cusp ridges of the maxillary lingual cusps

12 Forming the maxillary lingual cones and the cusp ridges of the maxillary lingual cusps

13 Shaping the lingual surfaces and triangular crests of the maxillary lingual cusps

14 Shaping the lingual surfaces and triangular crests of the maxillary lingual cusps

15 Forming the mesial and distal marginal ridges of the maxillary posterior teeth. Building up the triangular ridges of the mandibular buccal cusps

16 Forming the mesial and distal marginal ridges of the maxillary posterior teeth. Building up the triangular ridges of the mandibular buccal cusps

17 Building up the mandibular lingual cones. Forming the lingual surfaces and the triangular ridges of the mandibular lingual cusps

18 Building up the mandibular lingual cones. Forming the lingual surfaces and the triangular ridges of the mandibular lingual cusps

19 Forming the mesial and distal cusp ridges of the mandibular lingual cusps. Face-bow and its use

20 Forming the mesial and distal cusp ridges of the mandibular lingual cusps. Face-bow and its use

21 Forming the mesial and distal marginal ridges of the mandibular posterior teeth. Face-bow and its use

22 Forming the mesial and distal marginal ridges of the mandibular posterior teeth. Face-bow and its use

23 Completing the mandibular and maxillary occlusal surfaces. Evaluating the completed cusps and ridges

24 Completing the mandibular and maxillary occlusal surfaces. Evaluating the completed cusps and ridges

25 Build up an upper central incisor

26 Build up an upper central incisor

27 Build up the occlusal surface of a molar tooth by oneself

28 Build up the occlusal surface of a molar tooth by oneself
Seminars

Exam topics/questions

1. Definition of Gnathology and components of the chewing apparatus
2. Anatomy of the temporomandibular joint
3. Ligaments of the temporomandibular joint, their role, and significance in the function of the joint
4. Classification of the chewing muscles
5. Anatomy of elevator muscles of the mandible
6. Anatomy of protractors muscles of the mandible
7. Perioral mimic muscles, muscles of the tongue and their functions
8. Morphological characteristics of the incisors and canines from gnathological aspects
9. Characteristics of the occlusal anatomy of molars and premolars
10. Prominent positions of the mandible
11. Definition of occlusal vertical dimension and postural jaw position and their clinical significance
12. Definition of central occlusion and central relation and their significance
13. Definition of euognath occlusion and deep-bite
14. Definition of curve of Spee and Wilson and their significance
15. Definition of occlusal plain and occlusal surface
16. Definition of retruded contact position, incisal edge-to-edge, lateral cusp-bite and maximal jaw open position.
17. Basic movements of the mandible
18. Symmetrical movements of the mandible
19. Asymmetrical movements of the mandible
20. The points of the mandible examined during the evaluation of mandibular movements according to the classical articulation doctrine
21. Movement paths of the mandibular condyle
22. Incisal guidance / in all planes/
23. Border movements of the mandible in the sagittal plain /incisal point, ectocondylare/
24. Border movements of the mandible in the horizontal plain /incisal point, ectocondylare/
25. Border movements of the mandible in the frontal plain /incisal point, ectocondylare/
26. Difference between the terms of centric occlusion and central occlusal position of the mandible
27. Difference between the terms of centric relation and central relation position of the mandible
28. Occlusal contacts in the intercuspal contact position of the mandible
29. Occlusal concepts used for artificial shaping of the occlusal surfaces of the teeth.
30. Occlusal contacts during pro- and retrusive movements of the mandible.
31. Occlusal contacts during lateral movements of the mandible.
32. Definition and components of articulators
33. Classification of appliances used for simulation of positions and movements of the mandible
34. Occludors, simple hinge articulators
35. Characteristics of semi-adjustable and fully adjustable articulators
36. Cast mounting on articulator with the use of Bonwill’s triangle
37. Cast mounting on articulator with face-bow
38. Programming the articulator
39. Definition of Bonwill’s triangle and Balkwill’s angle
40. Components of the occlusal surface
41. Anatomical and physiological occlusal surface of the teeth
42. Definition of supporting and guiding cusps
43. Classification of basic bite-types
44. Definition of Bennett-movement
45. Position of cusp-marginal ridge and cusp-fossa type occlusal contacts
46. Definition of tooth guidance
47. Masticatory movements of the mandible
48. Adaptation of cuspal teeth’s occlusal surfaces to mandibular movement paths
49. Articulation concepts of occlusal surfaces in natural and artificial dentition
50. Occlusal surface shaping of lower premolars with wax-up technique
51. Occlusal surface shaping of upper premolars with wax-up technique
52. Occlusal surface shaping of lower molars with wax-up technique
53. Occlusal surface shaping of upper molars with wax-up technique
54. Graphical recording methods
55. Direction lines and plains on the head, anthropological reference points
56. Lines determined by anthropological reference points and anthropological plains
57. Anatomy of the upper jaw
58. Anatomy of the mandible
59. Basic characteristics of human dentition
60. Changes of occlusion in adults, different types of tooth wear.
61. Sagittal Christensen phenomenon
62. Lateral Christensen phenomenon
63. Innervation of the function of the chewing apparatus

Participants
Dr. Baumann Petra (BAPFADO.PTE), Dr. Marada Gyula (MAGFABO.PTE), Dr. Markovics Dóra (MADOAAO.PTE), Dr. Radnai Márti Mária (RAMVAAP.PTE)
**OSP-KO1 Pathophysiology 1**

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**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

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

- 3 – 60

**Prerequisites:**

- OSA-BK2 completed + OSA-ET2 completed

**Topic**

Pathophysiology for dental students-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**

- Maximum of 15 % absence allowed

**Mid-term exams**

- **Making up for missed classes**

  Minimum 50% test score on the respective seminar topics.

**Reading material**

- **Obligatory literature**

  - Lecture and seminar slides will be uploaded to Neptun.

  - Notes

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

  - **Recommended literature**


**Lectures**

1. Heart failure.
   - Dr. Balaskó Márta

2. Peripheral circulatory failure: vasovagal syncope, circulatory shock (definition, forms and their causes, phases).
   - Dr. Balaskó Márta

   - Dr. Balaskó Márta

   - Dr. Balaskó Márta

5. Hypertension.
   - Dr. Balaskó Márta

6. Pathophysiology of the regulation and mechanics of breathing.
   - Dr. Balaskó Márta

   - Dr. Balaskó Márta

8. Restrictive/obstructive respiratory disorders, dyspnea.
   - Dr. Balaskó Márta

9. Pathophysiology of the glomerular and tubular functions.
   - Dr. Balaskó Márta

10. Chronic renal failure, uremia, uremic coma.
    - Dr. Balaskó Márta

11. Pathophysiology of the salt-water balance.
    - Dr. Szekeres-Solymár Margit

12. Disorders of the pH regulation.
    - Dr. Szekeres-Solymár Margit

13. Pathophysiology of the red blood cell system.
    - Dr. Balaskó Márta

    - Dr. Balaskó Márta
Practices

Seminars

1. Heart failure I.
2. Heart failure II.
3. Vasovagal syncope, circulatory shock (definition, forms and their respective causes, phases).
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.
10. Arrhythmias in the dental practice.
11. Alveolar hypoventilation.
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.
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.
27. Pathophysiology of hemostasis.

Exam topics/questions

Pathophysiology of the cardiovascular system for dentists.


Pathophysiology of the respiratory system for dentists.
Disorders of the control of breathing and sleep-apnea syndrome.
Pathogenesis and mechanisms of respiratory failure, consequences.
Obstructive and restrictive respiratory disorders.
Alveolar hyperventilation.

Disorders of oxygen transport (abnormal hemoglobin, CO-poisoning, methemoglobinemia).
Forms and mechanisms of hypoxia. Ways of compensation. Cyanosis.
Forms, general pathophysiology and consequences of anemia.
Polycythemia.
Pathophysiology of leukocytes for dentists.

Bleeding abnormalities due to platelet or vascular factors.
Congenital and acquired coagulopathies.
Thrombosis: causes and consequences.
Disseminated intravascular coagulation (DIC).
Pathophysiology of glomerular and tubular functions.

Hyposthenuria, asthenuria, osmotic diuresis.
Chronic renal failure, uremia
Pathophysiology of uremia for dentists.
Acute renal failure.
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.

Note: A chance: test-exam on basis of the above topics. For B and C chances: oral exam on basis of 3 questions from the list above.

Participants
Dr. Balaskó Márta (BAMMAAO.PTE), Dr. Rostás Ildikó (ROIOAAO.PTE), Dr. Szekeres-Solymár Margit (SOMFAAO.PTE)
Course director: Dr. Istvánné Bátai (Dr. Monika Kerényi), associate professor
Department of Medical Microbiology and Immunology

**OSP-MI1 MICROBIOLOGY 1**

- **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
- **Course headcount limitations (min.-max.):** 1 – 100
- **Prerequisites:** OSA-BK2 completed + OSA-IMM completed + OSP-PA1 parallel

### 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 emphasize 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 if infectious etiology, as well as those of diseases of other organ systems of stomatological relevance.

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

### Mid-term exams
4 written exams in exam period.

### Making up for missed classes

### Reading material
- **Obligatory literature**

- **Literature developed by the Department**
  Lectures on the CoOSP-ace

- **Notes**

- **Recommended literature**

### Lectures
1. Introduction the subject and history of microbiology
   Dr. Emődy Levente
2. Morphology and structure of bacteria
   Dr. Tigyi Zoltán
3. The physiology of bacteria
   Dr. Kocsis Béla
4. Bacterial genetics
   Dr. Tigyi Zoltán
5. Pathogenicity, infection
   Dr. Emődy Levente
6. Sterilization
   Dr. Bátaí Istvánné (Dr. Kerény Monika)
7. Disinfection
   Dr. Bátaí Istvánné (Dr. Kerény Monika)
<table>
<thead>
<tr>
<th>No.</th>
<th>Course Description</th>
<th>Instructor(s)</th>
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<tbody>
<tr>
<td>8</td>
<td>Antimicrobial chemotherapy</td>
<td>Dr. Kocsis Béla</td>
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<td>9</td>
<td>Antimicrobial chemotherapy</td>
<td>Dr. Kocsis Béla</td>
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<td>10</td>
<td>Antimicrobial chemotherapy</td>
<td>Dr. Kocsis Béla</td>
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<td>11</td>
<td>Immunology of infectious disease</td>
<td>Dr. Polgár Beáta</td>
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<td>Dr. Polgár Beáta</td>
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<td>13</td>
<td>Immunology of infectious disease</td>
<td>Dr. Polgár Beáta</td>
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<td>14</td>
<td>Vaccinology</td>
<td>Dr. Emődy Levente</td>
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<td>15</td>
<td>Pyogenic bacteria - staphylococci</td>
<td>Dr. Báta Istvánné (Dr. Kerényi Monika)</td>
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<td>16</td>
<td>Pyogenic bacteria - streptococci</td>
<td>Dr. Báta Istvánné (Dr. Kerényi Monika)</td>
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<td>17</td>
<td>Pyogenic bacteria - neisseria</td>
<td>Dr. Báta Istvánné (Dr. Kerényi Monika)</td>
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<td>18</td>
<td>Enteric bacteria - enteric pathogens - Enterobacteriaceae</td>
<td>Dr. Tigyi Zoltán</td>
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<td>19</td>
<td>Other enteric pathogens - Vibrios, Campylobacter, Wolinella, Helicobacter</td>
<td>Dr. Emődy Levente</td>
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<td>20</td>
<td>Veillonella, parvobacteria, Capnocytophaga</td>
<td>Dr. Tigyi Zoltán</td>
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<td>21</td>
<td>Lactobacilli, corynebacteria, propionibacteria</td>
<td>Dr. Tigyi Zoltán</td>
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<td>22</td>
<td>Pathogens in respiratory tract</td>
<td>Dr. Mestyán Gyula</td>
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<tr>
<td>23</td>
<td>Pathogens in respiratory tract</td>
<td>Dr. Mestyán Gyula</td>
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<td>24</td>
<td>Mycobacteria I</td>
<td>Dr. Emődy Levente</td>
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<td>25</td>
<td>Mycobacteria II</td>
<td>Dr. Emődy Levente</td>
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<td>26</td>
<td>Spirochetes, Leptotrichia</td>
<td>Dr. Kocsis Béla</td>
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<td>27</td>
<td>Aerobic and anaerobic spore forming bacteria, Actinomyces</td>
<td>Dr. Kocsis Béla</td>
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<td>28</td>
<td>Anaerobs: Bacteroides, Tannarella, Porphyromonas, prevotella, Fusobacterium</td>
<td>Dr. Kocsis Béla</td>
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<td>29</td>
<td>Chlamydia, rickettsiales, mycoplasma</td>
<td>Dr. Báta Istvánné (Dr. Kerényi Monika)</td>
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<td>30</td>
<td>Papillomaviruses, polyomaviruses, adenoviruses</td>
<td>Dr. Reuter Gábor</td>
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<td>31</td>
<td>Herpesviruses</td>
<td>Dr. Szereday László</td>
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<td>32</td>
<td>Orthomyxoviruses (influenza), paramyxoviruses</td>
<td>Dr. Reuter Gábor</td>
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<td>33</td>
<td>Picornaviruses</td>
<td>Dr. Reuter Gábor</td>
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<td>34</td>
<td>Hepatitis viruses</td>
<td>Dr. Szereday László</td>
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<tr>
<td>35</td>
<td>HIV/AIDS, infections in immunocompromised patients</td>
<td>Dr. Reuter Gábor</td>
</tr>
<tr>
<td>36</td>
<td>Mycology</td>
<td>Dr. Mestyán Gyula</td>
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</tbody>
</table>
37 Parazitology
  Dr. Kocsis Bélá
38 Oral microbiology: normal oral flora, ecosystem of oral cavity, dental plaque, biofilm
  Dr. Emődy Levente
39 Oral microbiology: Microbiology of dental caries
  Dr. Emődy Levente
40 Oral microbiology: microbiology of periodontal diseases
  Dr. Tigyi Zoltán
41 Oral microbiology: dentoalveolar infection
  Dr. Tigyi Zoltán
42 Oral microbiology: Infection of oral mucosa membrane and salivary gland
  Dr. Emődy Levente

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 Bacterial diagnosis of pyogenic infections; blood cultures
14 Bacterial diagnosis of pyogenic infections; blood cultures
15 Bacterial diagnosis of urinary tract infections
16 Bacterial diagnosis of urinary tract infections
17 Bacterial diagnosis of gastrointestinal infections
18 Bacterial diagnosis of gastrointestinal infections
19 Bacterial diagnosis of respiratory tract infections and meningitis
20 Bacterial diagnosis 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

Participants
Dr. Báta Istvánné (Dr. Kerényi Monika) (KEMHAAP.PTE), Dr. Emődy Levente (EMLGAAO.PTE), Dr. Kocsis Bélá (KOBHACE.PTE), Dr. Kovács Krisztiina (KOKFAIO.PTE), Dr. Mestyán Gyula (MELPAAP.PTE), Dr. Polgár Beáta (POBPAAP.PTE), Dr. Schneider György (SCGQAAP.PTE), Dr. Szereday László (SZLPAAP.PTE), Dr. Tigyi Zoltán (TIZHAAE.PTE)
OSP-ORR  ORAL RADIOLOGY

Course director:  DR. GYULA MARADA, assistant lecturer
Department of Dentistry, Oral-, Maxillofacial Surgery

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. GYULA MARADA, assistant lecturer</th>
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<td>Department:</td>
<td>Department of Dentistry, Oral-, Maxillofacial Surgery</td>
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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

Course headcount limitations (min.-max.): 2 – 30

Prerequisites:
OSA-NAN completed + OSA-ORB completed + OSP-FPP parallel

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

Mid-term exams
Making up for missed classes
None

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

Lectures

1 Principles of Radiology. Equipment
   Dr. Marada Gyula
2 Radiation detectors. Exposure
   Dr. Marada Gyula
3 Intraoral techniques. Anatomy of intraoral radiographs
   Dr. Marada Gyula
4 Extraoral techniques
   Dr. Marada Gyula
5 Anatomy of panoramic radiographs
   Dr. Marada Gyula
6 Radiation protection
   Dr. Marada Gyula
7 Radiological terminology, radiological diagnosis. Development of teeth.
   Dr. Marada Gyula
8 Cariology in radiology. Abrasion of teeth. Inflammation of the pulp.
   Dr. Marada Gyula
9 Diseases of apical and marginal periodontium
   Dr. Marada Gyula
10 Traumatic diseases of jaws and teeth
   Dr. Marada Gyula
11 Prosthodontic aspects of radiology
   Dr. Marada Gyula
12 Digital radiological techniques (RVG, CBCT)
   Dr. Marada Gyula
13 Endodontic aspects of radiology
   Dr. Marada Gyula
14 Radiological failures
   Dr. Marada Gyula
Practices
1-28 Intraoral x-ray exposure and processing

Seminars
Exam topics/questions
1. Oral radiologic equipment
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. Extaroral radiographs
8. Radiographs of the maxilla
9. Radiographs of the mandible
10. Rules of contact radiographs. Cephalographs
11. Panoramic radiographs
12. Exposure
13. Processing of dental radiographs
14. Equipment of digital intraoral radiology
15. CT and CBCT in dentistry
16. Density and contrast
17. Radiation failures. Failures before processing
18. Radiation protection
19. Protection of patients
20. Protection of staff
21. Assessment of perapical radiographs
22. Endodontic procedures and their radiologic aspects
23. Caries
24. Inflammation of apical periodontium
25. Diseases of the marginal periodontium
26. Dental trauma
27. Traumatism of the jaws
28. Osteomyelitis
Practical exam: intraoral radiograph taking for patients

Participants
Dr. Marada Gyula (MAGFABO.PTE)
OPD-PL1 PATHOLOGY FOR DENTAL STUDENTS 1
Course director: DR. BÉLA KAJTÁR, assistant 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
Course headcount limitations (min.-max.): 5 – 0
Prerequisites: OSP-KO1 parallel + OSA-NAN completed

Topic
Basic pathological cellular responses underlying the various disease processes are taught during this course. These are discussed in the following chapters: cell death, degeneration, intra- and extracellular accumulation, growth disturbances, acute and chronic inflammatory changes, disorders of circulation, genetic disorders, diseases of immunity and neoplasia (general oncology). 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. Cardiovascular pathology and pathology of the respiratory tract are two chapters of specific pathology that are also discussed during the course.
The driving principle behind this course is to have the students understand the disease concepts as the unity of macroscopy, microscopy, clinical symptoms and laboratory changes; factors that shape the clinicopathological thinking about diseases.
The main educational task of the subject:
The general pathology course will form the very basis for the systemic/organ pathology as well as the subsequent clinical studies by teaching the etiology, pathogenesis and pathomechanism together with the gross morphological and microscopical changes of the various diseases. During this activity the principal and methodology of the diagnostic pathology will be covered.

Conditions for acceptance of the semester
Conditions for acceptance of the semester
Absences exceeding 15% of the histopathology classes (two absences are allowed) in either semester will result in not signing the gradebook.
One macropreparation, one histological preparation and a theoretical question will be given to the students at the examination by the end of the first semester.

Mid-term exams
Making up for missed classes
Making up for missed classes
Each missed seminar has to be made up for with another group in the same week.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Reading material
  V. Kumar: Robbins Basic Pathology, 9th edition, Saunders Company, 2012

Lectures
I. INTRODUCTION, POSTMORTEM CHANGES, NECROSIS (5 LECTURES)
1. The objectives of pathology. Autopsy and surgical pathology. Pathology as a subject
   Dr. Tornóczki Tamás
   Dr. Tornóczki Tamás
   Dr. Tornóczki Tamás
4. Clinicopathology of AMI
   Dr. Tornóczki Tamás
5. Caseous necrosis and adiponecrosis. Apoptosis: morphology, pathomechanism
   Dr. Tornóczki Tamás
II. DEGENERATION, ACCUMULATION, PIGMENTS, CALCIFICATION (8 LECTURES)

6 Degeneration and accumulation I
Dr. László Terézia

7 Degeneration and accumulation II
Dr. László Terézia

8 Degeneration and accumulation III
Dr. László Terézia

9 Degeneration and accumulation IV
Dr. László Terézia

10 Degeneration and accumulation V
Dr. László Terézia

11 Exogenous and endogenous pigments I
Dr. László Terézia

12 Exogenous and endogenous pigments II
Dr. László Terézia

13 Calcification and lithiasis
Dr. László Terézia

III. GROWTH DISTURBANCES (3 LECTURES)

14 Regressive changes: atrophy. Organ examples. Classification of cells according to the mitotic capacity
Dr. Kereskai László

Dr. Kereskai László

16 Progressive changes II: hypertrophy. Left and right ventricular hypertrophy and their hemodynamic significance
Dr. Kereskai László

IV. PATHOLOGY OF CIRCULATION (6 LECTURES)

17 Edema
Dr. László Terézia

18 Hyperemia, congestio
Dr. László Terézia

19 Haemorrhages
Dr. László Terézia

20 Thrombosis and embolisation
Dr. László Terézia

21 Hypertension
Dr. László Terézia

22 Shock
Dr. László Terézia

V. INFLAMMATIONS (7 LECTURES)

23 Definition of acute inflammation, cellular and vascular reactions
Dr. Kajtár Béla

24 Mediators of acute inflammation
Dr. Kajtár Béla

25 Resolution of acute inflammation, reparation
Dr. Kajtár Béla

26 Clinicopathological forms of acute inflammation
Dr. Kajtár Béla

27 Chronic inflammation
Dr. Kajtár Béla

28 Granuloma, granulomatous inflammation
Dr. Kajtár Béla

29 Tuberculosis
Dr. Kajtár Béla
VI. IMMUNOPATHOLOGY (5 LECTURES)

30 Type I-IV. hypersensitivities and related disorders
  Dr. Kereskai László

31 Transplantation immunity
  Dr. Kereskai László

32 Pathogenesis of autoimmune diseases
  Dr. Kereskai László

33 Systemic lupus erythematoses (SLE)
  Dr. Kereskai László

34 Acquired immunodeficiency syndrome (AIDS)
  Dr. Kereskai László

VII. ONCOPATHOLOGY (10 LECTURES)

  Dr. Tornóczki Tamás

  Dr. Tornóczki Tamás

37 Oncogenes, protooncogenes, oncoproteins. Growth factor and growth factor receptor oncogenes (RET, KIT, PDGFR). Overexpression of normal growth factor receptors (ERBB1, ERBB2). Organ examples.
  Dr. Tornóczki Tamás

38 Oncogenes and oncoproteins in signal transduction: RAS and RAS-signal proteins. Examples for oncogene with non-receptor tyrosine kinase function.
  Dr. Tornóczki Tamás

  Dr. Tornóczki Tamás

40 Tumour suppressor genes: RB and p53. Their role in tumorigenesis. Organ examples.
  Dr. Tornóczki Tamás

41 Tumour suppressor genes: NF1, NF2, VHL, WT-1 and WT-2. Related syndromes.
  Dr. Tornóczki Tamás

42 Chemical and radiation cancerogenesis. The multistep carcinogenesis of colorectal adenocarcinoma.
  Dr. Tornóczki Tamás

43 Microbial carcinogenesis: RNA and DNA viruses. Helicobacter pylori.
  Dr. Tornóczki Tamás

  Dr. Tornóczki Tamás

VIII. CARDIOVASCULAR PATHOLOGY (5 LECTURES)

45 Ischemic heart diseases, sudden cardiac death, angina pectoris, chronic ischemic heart disease
  Dr. Tornóczki Tamás

46 Pathology of heart valves, myocarditides
  Dr. Tornóczki Tamás

47 Cardiomyopathies, tumours of the heart and pericardial disorders
  Dr. Tornóczki Tamás

48 Congenital heart diseases
  Dr. Tornóczki Tamás

  Dr. Tornóczki Tamás

IX. PATHOLOGY OF THE RESPIRATORY TRACT (7 LECTURES)

50 Pathology of upper airways
  Dr. László Terézia

51 Congenital anomalies of the lung, pulmonary edema, atelectasis, acute lung injury
  Dr. László Terézia

52 Lower airway infections
  Dr. László Terézia

53 Chronic obstructive lung diseases
  Dr. László Terézia

54 Chronic restrictive lung diseases
  Dr. László Terézia
55 Tumours of the lung
   Dr. László Terézia
56 Pleural and mediastinal disorders
   Dr. László Terézia

Practices

Seminars

1. week:

I. POSTMORTEM CHANGES, NECROSIS

Preparations:
1. Postmortem emphysema of the liver
2. Anaemic infarct of the heart
3. Anaemic infarct of the spleen and splenomegaly
4. Haemorrhagic infarct of the small intestine
5. Phthisis renalis (caseation)
6. Gangraena sicca of the toes
7. Cerebral abscess
8. Acute pancreatitis with adipone

Slides:
1. Normal and postmortal pancreas (HE)
2. Apoptosis in a reactive lymph node (follicular hyperplasia)
3. Recent infarct of the heart
4. Pseudomembranous colitis
5. Hemorrhagic infarct of the lung
6. Encephalomalacia alba
7. Acute pancreatitis - adiponecrosis

2. week:

II. DEGENERATION, ACCUMULATION, PIGMENTS, CALCIFICATION

Preparations:
9. Steatosis hepatis
10. Aortic athersclerosis with aneurysm
11. Haemochromatosis
12. Systemic amyloidosis
13. Cholelithiasis, chronic cholecystitis and empyema
14. Table of frequent bilestones
15. Nodular calcified aortic stenosis

Slides:
8. Parenchymal degeneration in kidney
9. Steatosis hepatis
10. Haemosiderosis of liver
11. Brown induration of the lung
12. Anthracosis of lymph node
13. Amyloidosis of the liver
14. Calcification in breast cancer (Kossa reaction)
15. Gaucher’s disease

3. week:

III. GROWTH DISTURBANCES

Preparations:
16. Cerebral atrophy
17. Concentric hypertrophy of the left ventricule of the heart
18. Dilatative hypertrophy of the left ventricule of the heart
19. Chronic cor pulmonale
20. Prostatic hyperplasia

4. week:

Slides:
16. Normal and hypertrophic cardiac muscle
17. Prostatic hyperplasia
18. Glandular cystic hyperplasia of the endometrium
5. week:
IV. PATHOLOGY OF CIRCULATION
Preparations:
21. Cerebral apoplexy
22. Cerebral purpura
23. Cerebral edema, incarceration of cerebellar tonsils
24. Abdominal aortic aneurysm - parietal thrombosis
25. Left atrial „ball“ thrombus

6. week:
Slides:
19. Hepar moschatum
20. Pulmonary edema
21. Thrombus and postmortem blood clot
22. DIC (fibrinthrombi in kidney) (fibrin stain)
23. Central hemorrhagic necrosis

7. week:
V. INFLAMMATIONS
Preparations:
26. Fibrinous pericarditis - cor villosum
27. Lobar pneumonia
28. Bronchopneumonia
29. Purulent meningitis
30. Pulmonary abscess
31. Foreign body in bronchus
32. Pleural callus
33. Chronic cholecystitis
34. Sarcoidosis - BHL
35. Miliary tuberculosis of the lungs
36. Phtisis cavernOSA-

8. week:
Slides:
24. Fibrinous pericarditis - cor villosum
25. Bronchopneumonia
26. Lobar pneumonia
27. Purulent meningitis
28. Acute appendicitis
29. Chronic cholecystitis
30. Sarcoidosis in lymph node
31. Foreign body granuloma
32. Miliary tuberculosis of the lung
33. Myocardial infarct with organisation

9. week:
VI. ONCOPATHOLOGY
Preparations:
37. Fibroadenoma of breast
38. Carcinoma of the breast
39. Leiomyoma of uterus
40. Cysta dermoides
41. Rectal polyp
42. Rectal adenocarcinoma
43. Pulmonary metastases
44. Lymphangitis carcinomatOSA-
45. Linitis plastica and Krukenberg tumor
10. week:
   Slides:
   34. Squamous metaplasia in bronchus
   35. Cervical intraepithelial neoplasia CIN III
   36. Polyps adenomatous coli (p53)
   37. Squamous carcinoma of lower lip
   38. Adenocarcinoma metastasis in lymph node
   39. Anaplastic carcinoma (brain metastasis)

11. week:
VII. CARDIOVASCULAR PATHOLOGY
   Preparations:
   46. Aneurysma thrombotisatum ventriculi sinistri cordis
   47. Endocarditis septica
   48. Endocarditis chronica - mitral stenosis
   49. Löffler’s endocarditis
   50. Congestive cardiomyopathy
   51. Hypertrophic cardiomyopathy
   52. Foramen ovale late apertum
   53. Roger’s disease
   54. Ductus Botalli persistens
   55. Dissecting aortal aneurysm
   56. Luetic aortitis
   57. Cavernous hemangioma of the liver

12. week:
   Slides:
   40. Viral myocarditis
   41. Hypertrophic cardiomyopathy
   42. Arteritis temporalis
   43. Haemangiomata cavernosum hepatis
   44. Kaposi sarcoma

13. week:
VIII. PATHOLOGY OF THE RESPIRATORY TRACT
   Preparations:
   58. Supraglottic carcinoma of the larynx
   59. NRDS
   60. Bronchiectasis
   61. Bronchial carcinoma
   62. Mesothelioma
   63. Silicosis

14. week:
   Slides:
   45. NRDS
   46. Aspergillosis of the lung
   47. CMV lung
   48. Bronchial asthma
   49. Silicosis
   50. Microcellular carcinoma of the lung
   51. Planocellular carcinoma of the lung
   52. Lepidic adenocarcinoma
Exam topics/questions

THEORETICAL QUESTIONS

I. POSTMORTEM CHANGES, NECROSIS
1. The objectives of pathology. Autopsy and surgical pathology. Pathology as a subject.
5. Patterns of necrosis: liquefactive type. Organ examples.
6. Caseous necrosis and adiponecrosis.

II. DEGENERATION, ACCUMULATION, PIGMENTS, CALCIFICATION
8. The definition and types of degenerations. Parenchymal and fatty degeneration. Organ examples.
9. Pathomorphology, pathogenesis and complications of atherosclerosis
12. Hemoglobinogenic pigments II. Pathological forms of iron storage
14. Dystrophic and metastatic calcification. Organ manifestations
15. Pathomechanism and clinicopathological forms of stone formation
17. Lysosomal storage diseases, glycogenesis, mucopolysacharidosis

III. GROWTH DISTURBANCES
18. Causes of atrophy; general gross morphology and microscopical characteristics. Pathomechanism of atrophy
20. Definition, types and organ examples of hyperplasia
21. Definition of hypertrophy (causes, morphology, changes at cell cycle)
22. Left ventricular hypertrophy. Causes, sequential compensatory changes and functional consequences.
23. Cor pulmonale chronicum

IV. PATHOLOGY OF CIRCULATION
24. Definition of edema, pathomechanism (Starling law), clinical forms
25. Classification of haemorrhages based on pathomechanism, clinical forms. Congestion and hyperemia.
26. Thrombosis and embolus: definitions, cases, types and clinical consequences
27. Causes, types and pathomechanisms of shock. Disseminated intravascular coagulation (DIC).
28. Clinicopathological classification of hypertension and complications

V. INFLAMMATIONS
29. Vascular and cellular mechanisms of acute inflammations
30. Mediators of acute inflammation.
32. Definition, causes, cellular and humoral mechanisms of chronic inflammation.
33. Pathogenesis and clinicopathology of tuberculosis
34. Granuloma, granulomatous inflammation

VI. IMMUNOPATHOLOGY
35. Type I. and type II. hypersensitivity reactions, mechanisms and related disorders.
36. Type III. and type IV. hypersensitivity reactions, related disorders.
37. Pathogenesis of autoimmune disorders
38. Systemic lupus erythematoses (SLE)
39. Transplantation immunity
40. Aquired immunodeficiency syndrome (AIDS)
VII. ONCOPATHOLOGY
42. Definition of metaplasia, dysplasia and their relation to neoplasia. Organ examples. Hamartoma and choristoma.
44. Epidemiology of cancers. Incidence and mortality. Changes in death rates of cancers in the last decades.
45. Oncogenes, protooncogenes, oncoproteins. Growth factor and growth factor receptor oncogenes (RET, KIT, PDGFR). Overexpression of normal growth factor receptors (ERBB1, ERBB2). Organ examples.
47. The myc oncogene. Types and their changes and role in tumours (c-myc, n-myc). Cell cycle regulators: p16 gene.
49. Tumour suppressor genes II: NF1, NF2, VHL, WT-1 and WT-2. Related syndromes.
50. Chemical and radiation carcinogenesis. The multistep carcinogenesis of colorectal adenocarcinoma.
53. Grading and staging. Laboratory diagnosis of cancer.

VIII. CARDIOVASCULAR PATHOLOGY
54. Angina pectoris, chronic ischemic heart disease, sudden cardiac death.
55. Clinicopathology of acute myocardial infarction.
56. Pathology of the valvular disorders (inflammatory and degenerative ones).
57. Cardiomyopathies. Tumors and tumor-like conditions of the heart.
58. Myocarditis. Pathology of the pericardium.
59. Congenital heart diseases.
60. Types and clinicopathology of the aneurysms.

IX. PATHOLOGY OF RESPIRATORY TRACT
62. Diseases of the upper airways
63. Congenital anomalies of the lungs, atelectasis, acute lung injury
64. Infectious disorders of the lower airways
65. General characteristics and types of chronic obstructive lung diseases
66. Chronic restrictive lung diseases
67. Vascular diseases of the lung
68. Lung tumors
69. Pleural and mediastinal disorders

PREPARATIONS
I. POSTMORTEM CHANGES, NECROSIS
1. Postmortem emphysema of the liver
2. Anaemic infarct of the heart
3. Anaemic infarct of the spleen and splenomegaly
4. Haemorrhagic infarct of the small intestine
5. Phthisis renalis (caseation)
6. Gangraena sicca of the toes
7. Cerebral abscess
8. Acute pancreatitis with adiponecrosis

II. DEGENERATION, ACCUMULATION, PIGMENTS, CALCIFICATION
9. Steatosis hepati
10. Aortic atherosclerosis with aneurysm
11. Haemochromatosis
12. Systemic amyloidosis
13. Cholelithiasis, chronic cholecystitis and empyema
14. Table of frequent bilestones
15. Nodular calcified aortic stenosis
III. GROWTH DISTURBANCES
16. Cerebral atrophy
17. Concentric hypertrophy of the left ventricle of the heart
18. Dilatative hypertrophy of the left ventricle of the heart
19. Chronic cor pulmonale
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IV. PATHOLOGY OF CIRCULATION
21. Cerebral apoplexy
22. Cerebral purpura
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V. INFLAMMATIONS
26. Fibrinous pericarditis - cor villosum
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31. Foreign body in bronchus
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38. Carcinoma of the breast
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41. Rectal polyp
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VIII. PATHOLOGY OF THE RESPIRATORY TRACT
58. Supraglottic carcinoma of the larynx
59. NRDS
60. Bronchiecstasy
61. Bronchial carcinoma
62. Mesothelioma
63. Silicosis
SLIDES

I. POSTMORTEM CHANGES, NECROSIS
1. Normal and postmortem pancreas (HE)
2. Apoptosis in a reactive lymph node (follicular hyperplasia)
3. Recent infarct of the heart
4. Pseudomembranous colitis
5. Hemorrhagic infarct of the lung
6. Encephalomalacia alba
7. Acute pancreatitis - adiponecrosis

II. DEGENERATION, ACCUMULATION, PIGMENTS, CALCIFICATION
8. Parenchymal degeneration in kidney
9. Steatosis hepatis
10. Haemosiderosis of liver
11. Brown induration of the lung
12. Anthracosis of lymph node
13. Amyloidosis of the liver
14. Calcification in breast cancer (Kossa reaction)
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III. GROWTH DISTURBANCES
16. Normal and hypertrophic cardiac muscle
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19. Hepar moschatum
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31. Foreign body granuloma
32. Miliary tuberculosis of the lung
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VI. ONCOPATHOLOGY
34. Squamous metaplasia in bronchus
35. Cervical intraepithelial neoplasia CIN III
36. Polypus adenomatous coli (p53)
37. Squamous carcinoma of lower lip
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39. Anaplastic carcinoma (brain metastasis)
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40. Viral myocarditis
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42. Arteritis temporalis
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46. Aspergillosis of the lung
47. CMV lung
48. Bronchial asthma
49. Silicosis
50. Microcellular carcinoma of the lung
51. Planocellular carcinoma of the lung
52. Lepidic adenocarcinoma

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

Participants
Dr. Semjén Dávid (SEDFABO.PTE), Dr. Tornóczki Tamás (TOTMABO.PTE)
### 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 practices basic examination methods are practised and discussed.

### Conditions for acceptance of the semester

Maximum of 15% absence allowed.

### Mid-term exams

Making up for missed classes

According to consultation with practice leaders.

### Reading material

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

### Lectures

1. History of surgery, asepsis, antisepsis  
   Dr. Menyhei Gábor

2. Indication in surgery, assessment of risk, basic principles in operating theatre  
   Dr. Menyhei Gábor

3. Wound healing  
   Dr. Fazekas Gábor

4. Principles of wound management, first aid  
   Dr. Fazekas Gábor

5. Surgical infections  
   Dr. Fazekas Gábor

6. Antibiotics in surgery  
   Dr. Fazekas Gábor

7. Principles of anaesthesia  
   Dr. Bátaí István

8. Types of anaesthesia  
   Dr. Bátaí István

9. Intensive therapy, resuscitation, shock management  
   Dr. Jáksó Krisztián

10. Preoperative assessment and management  
    Dr. Jáksó Krisztián

11. Principles of trauma management II.  
    Dr. Szabó Tamás

12. Principles of trauma management I.  
    Dr. Szabó Tamás

13. Pulmonary surgery  
    Dr. Szántó Zalán János

14. Non-pulmonary thoracic surgery  
    Dr. Szántó Zalán János

15. Chronic diseases of veins and lymphatics  
    Dr. Menyhei Gábor
8 Acute diseases of veins  
  Dr. Menyhéi Gábor
9 Vascular surgery: Occlusive diseases. Diagnosis and management  
  Dr. Jancsó Gábor
9 Carotid stenosis and arterial aneurysms  
  Dr. Jancsó Gábor
10 Surgery of thyroid and parathyroid glands  
  Dr. Fazekas Gábor
10 Diseases of breast  
  Dr. Fazekas Gábor
11 Surgery of oesophagus, stomach and duodenum  
  Dr. Benkő László
11 Surgery of pancreas and spleen  
  Dr. Benkő László
12 Surgery of liver  
  Dr. Benkő László
12 Surgery of gallbladder and bile ducts  
  Dr. Benkő László
13 Diseases of small and large bowels  
  Dr. Benkő László
13 Diseases of rectum and anus  
  Dr. Benkő László
14 Principles in oncology. Diagnostics and management  
  Dr. Benkő László
14 Surgery of acute abdomen  
  Dr. Benkő László

Practices
1 General Surgery
2 General Surgery
3 General Surgery
4 Intensive Therapy
5 Intensive Therapy
6 Traumatology
7 Thoracic surgery
8 Vascular Surgery
9 General Surgery
10 General Surgery
11 General Surgery
12 General Surgery
13 General Surgery
14 General Surgery

Seminars

Exam topics/questions
According to lecture topics.

Participants
Dr. Báta István (BAIMABO.PTE), Dr. Benkő László (BELFAAO.PTE), Dr. Fazekas Gábor (FAGFABO.PTE), Dr. Jácsó Krisztían (JAKFAAO.PTE), Dr. Jancsó Gábor (JAGMAAO.PTE), Dr. Szabó Tamás (SZTFAMO.PTE), Dr. Szántó Zalán János (SZZFAAO.PTE)
UP MS Dentistry major – subjects of the Pre-clinical module - Course descriptions – academic year of 2016/2017

OSP-BPR  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

Course headcount limitations (min.-max.): 1 – 150
Prerequisites: OSA-ET1 completed + OSA-NAN completed

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

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

Mid-term exams
Making up for missed classes
The maximum permitted number of absences is 3 practices. Each further missed practice has to be made up for during the semester period.

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

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

Practices
1-28  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.

Participants

Dr. Bekő Viktória (OKBFAA.A.JPTE), Dr. Fábián György (FAGHAAE.PTE), Dr. Molnár Gergő Attila (MOGFABO.PTE), Dr. Sebők Judit (SEJFAAO.PTE), Dr. Szigeti Nóra (SZNMAAO.PTE)
**Prosthodontics 1**

**Course director:** Dr. Mártá Mária Radnai, professor  
Department of Dentistry, Oral-, Maxillofacial Surgery

<table>
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<tr>
<th>Course credits</th>
<th>Semester exam</th>
<th>Pre-clinical module</th>
<th>Spring semester</th>
<th>Recommended semester: 6</th>
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**Number of hours/semester:**

14 lectures + 28 practices + 0 seminars = total of 42 hours

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

1 – 30

**Prerequisites:**

OSP-FPP completed + OSP-OFO parallel + OSP-SZP parallel

**Topic**

The student should learn the clinical and laboratory procedures and methods of making a complete denture. The student learns the technique of impression taking, using the face-bow, and practices the tooth preparation.

**Conditions for acceptance of the semester**

Making a lower and upper complete denture during the laboratory practice. The tooth preparations and the anatomic casts have to be accepted. If a student does not show up for the test, the test is considered as failed. The person responsible for the course-unit shall have the right to offer an excellent or good examination grade on the basis of outstanding mid-term performance and if it is accepted by the student, it shall qualify as a grade obtained at examination. The conditions of offering a grade shall be made public by the person responsible for the course-unit before announcing the course-unit. Due to generating examination sheets electronically, the student shall register for the examination even if he/she accepts the grade.

Based on this an excellent mark can be offered as a course mark to the student if both midsemester written test are awarded with excellent marks, and the student has an outstanding work in the practice as well. He does not need to take the exam.

**Mid-term exams**

Two written test.

Exam at the end of the semester will be in written form.

**Making up for missed classes**

(3) End-of-semester grade may be given by a) mid-term grade in the case of both theory-oriented and practice-oriented course-units on the basis of tests and assessments carried out during term-time, b) examination grade which may be defined on the basis of the performance at the examination exclusively or by taken into consideration performance on mid-term tests and the examination jointly. In the latter case the examination shall contribute to the grade by 50% at least and the mid-term tests by 50% at most.

**Reading material**

- **Obligatory literature**
  
  G Zarb et al.: Prosthodontic Treatment for Edentulous Patients, Elsevier
  
  Geering A, Kundert M, Kelsey CC: Complete Denture and Overdenture Prosthetics, Thieme

- **Literature developed by the Department**
  
  lecture notes

- **Notes**

- **Recommended literature**

**Lectures**

1. Consequences of complete edentulism. Anamnesis and examination of the edentulous patient.  
   Dr. Radnai Mártá Mária
2. Clinical anatomy of the edentulous mandible I.  
   Dr. Radnai Mártá Mária
3. Clinical anatomy of the edentulous mandible II.  
   Dr. Radnai Mártá Mária
   Dr. Muzsak Zsófia
   Dr. Radnai Mártá Mária
6. Midsemester written test  
   Dr. Radnai Mártá Mária
7. Making a functional impression on the edentulous mandible and maxilla.  
   Dr. Radnai Mártá Mária
Assessment of the occlusal plane, the occlusal vertical dimension and the centric relation. Intraoral gothic arch tracing registration.
Dr. Marada Gyula

Setting up of artificial teeth: methods, static and dynamic tooth setting.
Dr. Marada Gyula

Try-in, examination before processing the denture. Christensen’s phenomenon.
Dr. Radnai Márta Mária

Processing of the denture in the dental laboratory, reocclusion, delivery, remontage.
Dr. Radnai Márta Mária

Midsemester written test
Dr. Radnai Márta Mária

Problems and problem solving during the use of a complete denture. Relining, repairing, copying the denture.
Dr. Radnai Márta Mária

Maintenance of patients with complete dentures. Oral pathology of elderly edentulous patients.
Dr. Radnai Márta Mária

Practices
1. Laboratory practise: Making a lower and upper complete acrylic denture.
2. Laboratory practise: Making a lower and upper complete acrylic denture.
3. Laboratory practise: Making a lower and upper complete acrylic denture.
4. Laboratory practise: Making a lower and upper complete acrylic denture.
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12. Laboratory practise: Making a lower and upper complete acrylic denture.
13. Laboratory practise: Making a lower and upper complete acrylic denture.
14. Laboratory practise: Making a lower and upper complete acrylic denture.
15. Laboratory practise: Making a lower and upper complete acrylic denture.
16. Students take impressions from each other, bite registration.
17. Students take impressions from each other, bite registration.
18. Students take impressions from each other, bite registration.
19. Students take impressions from each other, bite registration.
20. Students take impressions from each other, bite registration.
21. Students take impressions from each other, bite registration.
22. Laboratory practice: Mounting the casts into the articulator. Practicing tooth preparation on manikin.
23. Laboratory practise: Mounting the casts into the articulator. Practicing tooth preparation on manikin.
24. Laboratory practise: Mounting the casts into the articulator. Practising tooth preparation on manikin.
25. Laboratory practise: Mounting the casts into the articulator. Practising tooth preparation on manikin.
26. Laboratory practise: Mounting the casts into the articulator. Practising tooth preparation on manikin.
27. Laboratory practise: Mounting the casts into the articulator. Practising tooth preparation on manikin.
28. Laboratory practise: Mounting the casts into the articulator. Practising tooth preparation on manikin.

Seminars

Exam topics/questions
1. Functions of complete removable denture.
2. Consequences of complete edentulousness.
3. History taking, patient examination, in case of complete edentulousness.
4. Preprosthetic treatment of the patients. How do you plan the treatment?
5. Stature factors affecting complete denture construction.
7. Parts and their task of the complete denture.
8. Which factors are relevant to complete denture retention? (Upper and lower jaw)
9. Functions of myofunctional factors in lower complete denture retention. Which muscles are advantageous and which are disadvantageous in complete denture retention.
10. Materials used for complete denture construction, what are the properties of these materials? (Base, artificial teeth)
15. Clinical anatomy of edentulous lower ridge. Basic forms of mandibular edentulous ridges.
16. Clinical anatomy and prosthetic significance of the mucosa of the mandibular edentulous alveolar ridge and the vestibular and lingual mandibular mucosal reflection.
17. Clinical anatomy and prosthetic significance of the mucosa over the maxillary edentulous alveolar ridge and the maxillary vestibular mucosal reflection.
18. Clinical anatomy and prosthetic significance of the maxillary edentulous alveolar ridge. The displaceable flabby ridge.
19. Clinical anatomy and prosthetic significance of retromolar pad and tubercule-masseter split. (Borders and muscles)
20. Clinical anatomy (borders and muscles) and prosthetic significance of the middle lingual vestibule (mylohyoid area/ paralingual area).
21. Clinical anatomy (borders and muscles) and prosthetic significance of the distolingual vestibule (retromylohyoid area),
22. Clinical anatomy (borders and muscles) and prosthetic significance of the anterior lingual vestibule (sublingual crescent area).
23. Clinical anatomy (borders and muscles) and prosthetic significance of the buccal shelf (accessory mandibular recess).
24. Clinical anatomy (borders and muscles) and prosthetic significance of the buccinator split.
26. Describe the fixed, mobile and displaceable mucosa, where can you find them, what are their significance in prosthodontics?
27. Borders of upper and lower complete denture base.
28. Requirements of special tray in case of complete edentulousness, material of the special tray, methods of construction.
30. Steps and materials of the lower functional impression.
31. Steps and materials of the upper functional impression.
32. Preparation of the functional cast, relief areas and procedure to achieve relief.
33. What is the difference between the occlusal plane and the occlusal surface? What is the significance of determining the occlusal plane?
34. Registration of occlusal vertical dimension and centric relation in case of complete upper and lower edentulousness, and in case of lower edentulous ridge (patient has his upper teeth
35. Materials of the occlusal rim, and its processing.
36. How can be determined the centric relation in case of complete edentulism with intraoral gothic arch tracing?
37. Definition of prosthetic curve of Spee and its role in tooth set-up for complete denture.
38. What are the functional and esthetic aspects of setting up the artificial teeth in complete dentures?
39. What are an occludor and an articulator, their role in setting up the teeth in complete denture?
40. What are the important anatomical features of front teeth, canines, premolars and molars from prosthetic point of view?
41. What and how do you check at the trial denture stage? Christensen phenomenon: definition, explanation, clinical impact.
42. Processing of complete denture, laboratory steps.
43. Development of oral and vestibular tissue surface of complete dentures.
44. Steps of upper complete denture construction with traditional method.
45. Preparation of complete denture with final denture base method. What kind of failures can occur?
46. Possible failures during complete denture processing. Importance and steps of reocclusion/laboratory remount.
47. Final insertion of upper and lower complete dentures.
48. Importance and steps of clinical remount of complete denture.
49. Definition of mucosal resilience, what is the extent of the resilience, why is it important in prosthetics? What are the reasons of complete denture sinking?
50. Complete denture reline: clinical and technical steps
51. Types and properties of artificial teeth
52. Material of the base plate, types, characteristics
53. Preparation of a copy denture
54. Problems and problem solving during the use of a complete denture.
55. Intraoral gothic arch tracing registration.

Participants
Dr. Benke Beáta (BEBFADO.PTE), Dr. Marada Gyula (MAGFABO.PTE), Dr. Markovics Dóra (MADOAAO.PTE), Dr. Muzsek Zsófia (MUZFACO.PTE), Dr. Radnai Mártá Mária (RAMVAAP.PTE)
### OSP-KO2 Pathophysiology 2

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. MÁRTA BALASKÓ, associate professor</th>
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<tr>
<td>Course director:</td>
<td>Institute for Translational Medicine</td>
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**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

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

**Prerequisites:** OSP-KO1 completed

### Topic

Pathophysiology for dental students-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

Maximum of 15% absence allowed

### Mid-term exams

Making up for missed classes

Minimum 50% test score on the respective seminar topics.

### Reading material

- **Obligatory literature**

- **Literature developed by the Department**
  
  Lecture and seminar slides will be uploaded to Neptun.

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

- **Recommended literature**
  
  

### Lectures

1. Gastroenterology (pathophysiology of the esophageal and gastric functions).
   Dr. Balaskó Márta

2. Diarrhea
   Dr. Balaskó Márta

3. Pathophysiology of liver functions (intermediary metabolism, jaundice).
   Dr. Balaskó Márta

   Dr. Balaskó Márta

5. Overfeeding, obesity.
   Dr. Balaskó Márta

6. Pathophysiology of thermoregulation.
   Dr. Balaskó Márta

7. Etiology and pathogenesis of diabetes mellitus syndromes.
   Dr. Balaskó Márta

8. Chronic consequences of diabetes mellitus syndromes.
   Dr. Balaskó Márta

   Dr. Szekeres-Solymár Margit

10. Abnormalities of lipid metabolism.
    Dr. Szekeres-Solymár Margit

    Dr. Balaskó Márta

12. Abnormalities if the thyroid functions (hypofunction).
    Dr. Balaskó Márta

    Dr. Balaskó Márta

    Dr. Balaskó Márta
Practices

Seminars

1. Gastroenterology (vomiting, peptic ulcer).
2. Diarrhea.
4. Pancreatitis (acute, chronic).
5. Pathophysiology of liver function (portal hypertension, ascites, cirrhosis).
7. Total starvation.
8. Partial starvation.
10. Complications of obesity, metabolic syndrome.
11. Cold-defence and cold-induced disorders. Warm-defence and heat-induced disorders.
12. Fever and sickness-behavior.
14. Acute complications of diabetes mellitus syndromes II.
15. Chronic complications of diabetes mellitus syndromes.
17. Disorders of protein metabolism.
19. Abnormalities of lipid metabolism.
20. Pathomechanisms of atherosclerosis.
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.
Vomiting (acute, chronic) and its importance in dental practice.
Disorders of gastric juice production. Peptic ulcer.

Diarrhea: causes, pathophysiological forms, consequences.
Bowel obstruction.
Acute pancreatitis: pathophysiology and consequences.
Pathophysiology of chronic pancreatitis.
Pathophysiology of liver functions and their importance in dental practice.

Disorders of intermediary metabolism in general liver cell damage.
Jaundice.
Hepatic coma.
Water-soluble vitamins and their importance in dental practice.
Fat-soluble vitamins and their importance in dental practice.

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. Metabolic syndrome.
Consequences of obesity. Therapeutic possibilities.
Cold-defense and cold-induced disorders.
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 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.
Abnormalities of parathyroid functions and calcium levels, their manifestations in teeth and bones.
Hypocalcemia, hypercalcemia.

Mechanisms and disturbances of bone remodeling. Osteoporosis, osteomalacia.
Pathophysiological aspects of the dental treatment of elderly patients.

Note: A chance: test-exam on basis of the above topics. For B and C chances: oral exam on basis of 3 questions from the list above.

Participants
Dr. Balaskó Márta (BAMMAAO.PTE), Dr. Rostás Ildikó (ROIOAAO.PTE), Dr. Szekeres-Solymár Margit (SOMFAAO.PTE)
**Topic**

The Dental Student Education Program of the Department of Radiology is active in the fourth year of the dental student curriculum. During the radiology course a general overview of diagnostic imaging is presented, however, with a special focus on dentistry-related topics. Our goal is to provide a firm grounding in the basic knowledge and skills of our field as well as instruction on how to interact with radiology and radiologists to get the most benefit for your patients.

**Conditions for acceptance of the semester**

The completion of Clinical Radiology course will be verified (and the index signed) in case of maximum two absences from clinical practices (2 hours). To recover the absences over the limit, the permission of clinical director is needed (e.g. in case of health problems that is legally documented).

The final exam starts with a written test, based on which we offer a grade for the student. If the test fails or the offered grade is not acceptable, an oral exam shall be taken.

**Mid-term exams**

**Making up for missed classes**

No possibility for the replacement.

**Reading material**

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

In English:
- Herring: Learning Radiology, Saunders, 2015
- G. M. Roberts, J. P. Hughes and M. D. Hourihan: Clinical Radiology for Medical Students

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

**Lectures**

1 Diagnostic imaging methods.
   Dr. Bogner Péter
2 Basics of radiation protection.
   Dr. Bogner Péter
3 Neuroradiology I.
   Dr. Bogner Péter
4 Neuroradiology II.
   Dr. Bogner Péter
5 Head and neck radiology I. (orbit, sinuses, salivary glands) I.
   Dr. Rostás Tamás
6 Head and neck radiology I. (orbit, sinuses, salivary glands) II.
   Dr. Rostás Tamás
7 Head and neck radiology II. (pharynx, basis, soft tissue of the neck) I.
   Dr. Rostás Tamás
8 Head and neck radiology II. (pharynx, basis, soft tissue of the neck) II.
   Dr. Rostás Tamás
9 Radiology of the chest (heart, great vessels, lungs) I.
   Dr. Battyáni István
10 Radiology of the chest (heart, great vessels, lungs) II.
   Dr. Battyáni István
11 Gastrointestinal system I.
   Dr. Faluhelyi Nándor
12 Gastrointestinal system II.
   Dr. Faluhelyi Nándor
13 Urogenital system and interventional radiology I.
   Dr. Farkas Péter István
14 Urogenital system and interventional radiology II.
   Dr. Farkas Péter István

Practice
2 US examination demo on a volunteer, acoustic shadow, air in the bowel, introducing relative strengthen, patient preparation, different frequency transducers, demo of focusing, visit a CT examination, patient preparation, process of contrast injection, pre- and post-contrast series, windowing
3 MRI examination and visit the equipment, patient preparation, MRI safety, coils.
4 Neuroradiology case presentation in the seminar room.
5 Head and neck case presentation I.
6 Head and neck case presentation II.
7 Head and neck case presentation III.
8 Intervention.
9 Radiology of the chest: case presentation I.
10 Radiology of the chest: case presentation II.
11 Gastrointestinal system case presentation I.
12 Gastrointestinal system case presentation II.
13 Urogenital system case presentation
14 Intervention workplace, introduction to instruments

Seminars

Exam topics/questions
1. Principles and applications of US imaging
2. Principles and applications of CT imaging
3. Principles and applications of MR imaging
4. Diagnostic imaging of common pathologies of the CNS
5. Diagnostic imaging of the nasal cavity, sinuses, orbits and the skull base
6. Diagnostic imaging of pharynx, larynaxes, neck and thyroid gland
7. The basics of thoracic radiology
8. The basics of gastrointestinal radiology
9. The basics of urogenital radiology
10. Principles and applications of interventional radiology

Participants
Dr. Bódisné Dr. Zámbó Katalin (BOZMAAO.PTE), Dr. Kékkői László (KELMABO.PTE)
**Course description**

**Course director:**

DR. EDINA LEMPEL, assistant professor

Department of Dentistry, Oral-, Maxillofacial Surgery

<table>
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<th>Course Code: OSP-OFO Operative Dentistry - Prophodetics</th>
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<td><strong>Course director:</strong> DR. EDINA LEMPEL, assistant professor</td>
</tr>
<tr>
<td><strong>Department of Dentistry, Oral-, Maxillofacial Surgery</strong></td>
</tr>
<tr>
<td><strong>Course information:</strong> 3 credit • semester exam • Pre-clinical module • spring semester • recommended semester: 6</td>
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<td><strong>Number of hours/semester:</strong> 28 lectures + 14 practices + 0 seminars = total of 42 hours</td>
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<td><strong>Course headcount limitations (min.-max.):</strong> 3 – 25</td>
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<td><strong>Prerequisites:</strong> OSA-ANY completed + OSA-ET2 completed + OSP-FPP completed</td>
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</table>

**Topic**

Students should acquire the basic treatment methods of carious lesions.

**Conditions for acceptance of the semester**

Attending the classes, according to the rules of the Code of Studies and Examinations (Max 15% absence is accepted from the lectures and from the practices).

**Mid-term exams**

3 tests will be written and the result of the tests will influence the final grade.

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
  - Sturdevant’s Art and Science of Operative Dentistry

- **Literature developed by the Department**
  - Topics of the oral presentations.

- **Notes**

- **Recommended literature**
  - S Cohen: Pathways of the Pulp
  - R G Craig: Restorative Dental Materials

**Lectures**

1. General rules of cavity preparation
   - Dr. Lempel Edina

2. The aim of endodontic procedures, clinical diagnosis, Isolation, Anesthesia
   - Dr. Lempel Edina

3. Class I. cavity preparation for amalgam filling
   - Dr. Lempel Edina

4. Morphology of pulp chamber and canal
   - Dr. Lempel Edina

5. Equipment of dental office. The position of patient and dentist during the treatment. Classification of cavities, nomenclature
   - Dr. Marada Gyula

6. Trepanation and the armamentarium for trepanation
   - Dr. Lempel Edina

7. Class III. cavity preparation for composite filling
   - Dr. Lempel Edina

8. Vitalalexstirpation, the armamentarium of root canal preparation, the lubrication
   - Dr. Lempel Edina

9. Instruments for cavity preparation
   - Dr. Lempel Edina

10. Determination of working length, step-back technique, anticurvature filling, point control
    - Dr. Lempel Edina

11. Matrix and matrix retainer. Isolation
    - Dr. Lempel Edina

12. Drying of root canal, provisional cavity liners, definite canal filling instrumentation
    - Dr. Lempel Edina
13 Class V. cavity preparation  
   Dr. Lempel Edina
14 Permanent root canal filling with lateral condensation technique  
   Dr. Lempel Edina
15 Amalgam restorations  
   Dr. Lempel Edina
16 Root canal therapy of extracted tooth (practice)  
   Dr. Lempel Edina
17 Composite restorations. Glass-ionomer cement restorations  
   Dr. Lempel Edina
18 Anatomy of extracted teeth (practice)  
   Dr. Lempel Edina
19 Class I. cavity preparation for cast inlay  
   Dr. Lempel Edina
20 Cavity for trepanation on extracted tooth  
   Dr. Lempel Edina
21 Class II. cavity preparation for cast inlay. Class V. cavity preparation for cast inlay. Inlay modeling  
   Dr. Lempel Edina
22 Root canal instrumentation wit step-back technique  
   Dr. Lempel Edina
23 Direct inlay modeling. Impressions for inlays  
   Dr. Lempel Edina
24 Root canal instrumentation wit step-back technique, point control x-ray  
   Dr. Lempel Edina
25 Instruments, materials and methods of polishing. Slice preparation  
   Dr. Lempel Edina
26 Root canal filling with lateral condensation technique  
   Dr. Lempel Edina
27 Consultation  
   Dr. Lempel Edina
28 Consultation  
   Dr. Lempel Edina

Practices
1 Class I. cavity preparation in lower first molar (occlusal, vestibular) for amalgam and composite filling, making of the filling.
2 Class II. MO cavity preparation in lower second premolar for amalgam filling, making the filling; Class II OD cavity preparation in upper first premolar for composite filling.
3 Class II. MOD cavity preparation in upper first molar for composite filling, making of the upper molars and premolars composite filling.
4 Class III. and IV. cavity preparation for composite fillings in upper incisors; class V cavity preparation for composite filling in upper canine and lower first molar. Making the fillings.
5 Test. Making of GIC fillings
6 Class I cavity preparation for cast inlay in lower second molar, direct wax modelling.
7 Class II MOD cavity preparation for cast inlay in lower first premolar, direct wax modelling; Class II MOD cavity preparation for composite inlay in upper second molar. Making of direct composite inlay.
8 Class II Cavity preparation for ceramic onlays in lower second molar. Making the onlay from composite.
9 Test. Practicing the Rubber dam isolation procedures
10 Trepanation cavity preparation in teeth with one root, working length determination with X-ray, filing of the root canal with step-back technique.
11 Definitive root canal filling with lateral condensation technique.
12 Fiber reinforced intrapulpal post insertion into extracted teeth; core build up, ferrule preparation.
13 Direct venner preparation, making of the venner with basic layering technique.
14 Consultation.

Seminars
Exam topics/questions

Theoretical exam:
1. Units and instruments of a dental practice
2. Position of the patient and the dentist, dental unit
3. General rules of cavity preparation, classification of the cavities, nomenclature
4. Hand instruments
5. Rotary instruments
6. Isolation, matrices
7. I. class cavity-preparation for plastic filling
8. II. class cavity-preparation for amalgam filling
9. II. class cavity-preparation for composite filling
10. III. class cavity-preparation for composite filling
11. IV. class cavity-preparation for composite filling
12. V. class cavity-preparation for plastic filling
13. Steps of amalgam filling
14. Steps of composite filling
15. Steps of glass-ionomer cement filling
16. Special cavity-preparation, parapulpal posts
17. Cavity preparation for I. class metal (cast) inlay
18. Cavity preparation for II. class metal (cast) inlay
19. Cavity preparation for composite inlay
20. The aim of endodontic treatment, Step-back preparation, root-canal morphology
21. Endodontic working length determination, point-control
22. Drying of root-canal, provisional and permanent root-canal filling

Practical exam:
1. I. class cavity preparation in molar (occlusal, vestibular) for amalgam filling, carriage of the amalgam filling
2. I. class cavity preparation in molar (occlusal, vestibular) for composite filling, carriage of the composite filling
3. II. class (MO) cavity preparation in molar or premolar for amalgam filling, carriage of the amalgam filling
4. II. class (OD) cavity preparation in molar or premolar for amalgam filling, carriage of the amalgam filling
5. II. class (MOD) cavity preparation in molar or premolar for amalgam filling, carriage of the amalgam filling
6. II. class (MO) cavity preparation in molar or premolar for composite filling, carriage of the composite filling
7. II. class (OD) cavity preparation in molar or premolar for composite filling, carriage of the composite filling
8. II. class (MOD) cavity preparation in molar or premolar for composite filling, carriage of the composite filling
9. III. class cavity preparation in upper incisor for composite filling, carriage of the composite filling
10. IV. class cavity preparation in upper incisor for composite filling, carriage of the composite filling
11. V. class cavity preparation for amalgam and composite filling, carriage of the filling
12. II. class (MO) cavity preparation for cast inlay, modelling from wax
13. II. class (OD) cavity preparation for cast inlay, modelling from wax
14. II. class (MOD) cavity preparation for cast inlay, modelling from wax
15. Making of a I. and V. class direct composite inlay
16. Making of a II. class (MO) direct composite inlay in molar or premolar
17. Making of a II. class (OD) direct composite inlay in molar or premolar
18. Making of a II. class (MOD) direct composite inlay in molar or premolar
19. II. class (MOD) cavity preparation for ceramic inlay, impression, modelling from Palavit G

Participants

Dr. Lempel Edina (LEEFABO.PTE)
**Topic**

During this semester the students acquire knowledge about the oral structures and these development, function and about the biochemical, molecular biological, histological processes of bone and oral environment.

**Conditions for acceptance of the semester**

Attending the classes, according to the rules of the Code of Rules and regulations.

Oral exam.  
A score system is used for the acceptance of practices.  
The score system is demonstrated on the first practice.

**Mid-term exams**

5th week: MIDTERM TEST theory and practice  
Tooth recognition.

**Making up for missed classes**

Not possible.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
Hand outs  
- **Notes**
  
- **Recommended literature**
  
  Ferguson DB: Oral Bioscience ISBN 0443053731

**Lectures**

1. Development of teeth  
   Dr. Nagy Ákos  
2. Process of mineralization  
   Dr. Nagy Ákos  
   Dr. Nagy Ákos  
4. Amelogenesis - tissue structure  
   Dr. Nagy Ákos  
5. Dentinogenesis - secondary, tertiary dentin formation  
   Dr. Nagy Ákos  
6. Cementogenesis. Histology and function of parodontal ligaments  
   Dr. Nagy Ákos  
7. Crystal-structure of bioapatites. Fluoride metabolism. Effect of fluorides on tooth structure  
   Dr. Nagy Ákos  
8. Eruption of teeth. Movement of teeth  
   Dr. Nagy Ákos  
9. Development and structure of pulp  
   Dr. Nagy Ákos  
    Dr. Nagy Ákos  
11. Ionizing radiation. Radio-Osseo-Necrosis  
    Dr. Nagy Ákos
12 Effect of diet on oral tissues. Effect of age. Systematic diseases, medicines in dental practice  
   Dr. Nagy Ákos
13 Structure of oral soft tissues. Gingival sulcus, crevicular fluid  
   Dr. Nagy Ákos
14 Anatomy of temporo-mandibular joint. Pathways of articulation. Mastication, swallow  
   Dr. Nagy Ákos

Practices
1 Morphology and functional anatomy of the chewing organ.
2 Morphology and functional anatomy of the chewing organ.
3 Morphology and functional anatomy of the chewing organ.
4 Morphology and functional anatomy of the chewing organ.
5 Morphology and functional anatomy of the chewing organ.
6 Morphology and functional anatomy of the chewing organ.
7 Morphology and functional anatomy of the chewing organ.
8 Morphology and functional anatomy of the chewing organ.
9 Morphology and functional anatomy of the chewing organ.
10 Morphology and functional anatomy of the chewing organ.
11 MIDTERM TEST Tooth recognition.
12 Bone regeneration; osseointegration
13 Salivary Glands Saliva production
14 Salivary Glands Saliva production
15 Role of saliva proteins and peptides in caries development and protection
16 Role of saliva proteins and peptides in caries development and protection
17 Oral clearance
18 Oral clearance
19 Specific and non specific oral defense
20 Specific and non specific oral defense
22 Oral microorganisms. Plaque, like a biofilm. Biochemistry of plaque
23 Saliva as a diagnostic tool
24 Saliva as a diagnostic tool
25 Inflammation
26 Oral tumors
27 Basic research methods and application of results in dental practice
28 Basic research methods and application of results in dental practice

Seminars

Exam topics/questions
1. Development of teeth
2. Process of mineralization
3. Osteogenesis
5. Amelogenesis
6. Dentinogenesis
7. Cementogenesis.
8. Histology and function of parodontal ligaments.
22. Role of saliva proteins and peptides in caries development and protection.
23. Bone regeneration, osseointegration.
24. Inflammation
25. Specific and aspecific oral protection.
28. Basic research methods and application of results in dental practice.
29. Oral clearance

Participants

Dr. Frank Dorotty (FRDIAO.PTE), Dr. Sándor Balázs Attila (SABFAA.T.JPTE)
### OSP-PA2 Pathology 2 - Oral Pathology

<table>
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<tr>
<th>Course director:</th>
<th>DR. BÉLA KAJTÁR, assistant professor</th>
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<td><strong>Course director:</strong></td>
<td>Department of Pathology</td>
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<th>Pre-clinical module</th>
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#### Topic

There is a special emphasis during the course on the clinicopathological view of the diseases, i.e., understanding the relationship of the clinical symptoms, macroscopical and microscopical changes of the diseased organs. By the end of the academic year, a basic clinicopathological affinity and competence in differential diagnosis is required of the students. Fundamentals and major examples of specific, organ pathology are discussed. The systemic pathology course involves the major fields of organ pathology not discussed in Pathology 1: dermatopathology, hematopathology, pathology of the gastrointestinal tract, liver, biliary tract, pancreas, kidney, male and female genital tract, skeletal system, endocrine system and soft tissues pathology. Cardiovascular pathology and pathology of the respiratory tract have been discussed during Pathology 1 course.

The main educational task of the subject:

The pathology course will form the basis for later clinical studies by teaching organ specific pathology knowledge, including the etiology and pathomechanism of diseases and the entire spectrum of pathological diagnostics from macroscopy and microscopy to special ancillary techniques (ultrastructural analysis, molecular pathology) with their clinical relevance.

#### Conditions for acceptance of the semester

Conditions for acceptance of the semester

Absences exceeding 15% each of the histopathology and autopsy practical classes will result in denial of signing the gradebook. Maximum absence: two (2x45 min.) Histology and two (2x45 min.) Autopsy practises.

One macropreparation and one histological preparation as well as two theoretical questions will be given to the students during the final examination at the end of the course. The theoretical questions include the entire organ pathology, cardiovascular pathology and pathology of the respiratory tract are included.

The capability of recognising diseases on the basis of gross morphology, interpreting basic clinicopathology and giving differential diagnostics will be examined during the regular autopsy classes of the last (14th) weeks of the second semester. A student whose performance is not found at least satisfactory will get one additional macropreparation during the final exam.

#### Mid-term exams

Making up for missed classes

Making up for missed classes

Each missed seminar has to be made up for with another group in the same week.

#### Reading material

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


Cawson RA: Cawson’s Essentials of Oral Pathology and Oral Medicine, 8th edition

**Lectures**

**I. PULMONOLOGY (6 LECTURES)**

1. Pathology of upper airways
   - Dr. László Terézia
2. Congenital anomalies of the lung, pulmonary edema, atelectasis, acute lung injury
   - Dr. László Terézia
3. Lower airway infections
   - Dr. László Terézia
   - Dr. László Terézia
5. Tumours of the lung.
   - Dr. László Terézia
6. Pleural and mediastinal disorders
   - Dr. László Terézia
### II. GASTROENTEROLOGY (6 LECTURES)

1. Congenital malformations of face, inflammatory changes, tumor-like conditions and tumours of the oral cavity  
   Dr. Pajor László  
2. Inflammatory diseases and tumours of the salivary glands  
   Dr. Pajor László  
3. Congenital and acquired diseases as well as tumors of the oesophagus.  
   Dr. Pajor László  
4. Pathology of the stomach  
   Dr. Pajor László  
5. Pathology of the small intestines  
   Dr. Pajor László  
6. Pathology of the colon and rectum  
   Dr. Pajor László

### III. LIVER, BILIARY TRACT, PANCREAS (6 LECTURES)

7. Circulatory disorders of the liver. Non-viral inflammations in the liver. Drug hepatopathies  
   Dr. Pajor László  
8. Acute viral hepatitis  
   Dr. Pajor László  
9. Chronic viral hepatitides  
   Dr. Pajor László  
10. Cirrhosis and hepatic failure  
   Dr. Pajor László  
11. Tumor-like conditions and true neoplasia of the liver.  
   Dr. Pajor László  
12. Pathology of the extrahepatic bile ducts and exocrine pancreas  
   Dr. Pajor László

### IV. HEMATOLOGY (6 LECTURES)

13. Ontogenesis of the lymphoid cells, lymphoid cell populations. Reactive lymph node changes  
   Dr. Kajtár Béla  
14. B-cell lymphomas  
   Dr. Kajtár Béla  
15. T/NK cell lymphomas  
   Dr. Kajtár Béla  
16. Hodgkin lymphoma  
   Dr. Kajtár Béla  
17. Haemopoiesis. Myeloproliferative neoplasms  
   Dr. Kajtár Béla  
18. Acut myloid leukaemias and myelodysplastic syndromes  
   Dr. Kajtár Béla

### V. MALE GENITALS AND URINARY TRACT (3 LECTURES)

19. Pathology of the testis and the appendices.  
   Dr. Kálmán Endre  
20. Pathology of the prostate.  
   Dr. Kálmán Endre  
21. Pathology of the penis.  
   Dr. Kálmán Endre

### VI. FEMALE GENITAL TRACT (8 LECTURES)

22. Pathology of the vulva and the vagina.  
   Dr. Kálmán Endre  
23. Inflammatory lesions of the female genital tract  
   Dr. Kálmán Endre  
24. Sexually transmitted diseases  
   Dr. Kálmán Endre  
25. Pathology of the cervix.  
   Dr. Kálmán Endre  
26. Pathology of the uterine corpus  
   Dr. Kálmán Endre  
27. Pathology of the ovaries  
   Dr. Kálmán Endre
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Pathology of pregnancy. (Abnormalities of implantation. Gestosis, Trophoblastic tumours)</td>
<td>Dr. Kálmán Endre</td>
</tr>
<tr>
<td>35</td>
<td>Pathology of the breast</td>
<td>Dr. Kálmán Endre</td>
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<tr>
<td>36</td>
<td>VII. NEUROPATHOLOGY (6 LECTURES)</td>
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<tr>
<td>36</td>
<td>Malformations of the brain, hydrocephalus, cerebral edema</td>
<td>Dr. Kajtár Béla</td>
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<tr>
<td>37</td>
<td>Vascular disorders of the central nervous system</td>
<td>Dr. Kajtár Béla</td>
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<tr>
<td>38</td>
<td>Dementias, neurodegenerative disorders.</td>
<td>Dr. Kajtár Béla</td>
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<tr>
<td>39</td>
<td>Demyelinisation disorders, multiple sclerosis.</td>
<td>Dr. Kajtár Béla</td>
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<tr>
<td>40</td>
<td>Inflammations of the central nervous system</td>
<td>Dr. Kajtár Béla</td>
</tr>
<tr>
<td>41</td>
<td>Central nervous system tumors</td>
<td>Dr. Kajtár Béla</td>
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<tr>
<td>42</td>
<td>VIII. ENDOCRINOLOGY AND SOFT TISSUES (6 LECTURES)</td>
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<tr>
<td>42</td>
<td>Pathological conditions of the hypothalamo-hypophyseal system</td>
<td>Dr. Tornóczki Tamás</td>
</tr>
<tr>
<td>43</td>
<td>Pathology of the thyroid gland (developmental abnormalities, hyperplasia, thyreoiditis, tumours)</td>
<td>Dr. Tornóczki Tamás</td>
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<tr>
<td>44</td>
<td>Pathology of the parathyroid glands</td>
<td>Dr. Tornóczki Tamás</td>
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<tr>
<td>45</td>
<td>Pathology of the adrenal gland. MEN</td>
<td>Dr. Tornóczki Tamás</td>
</tr>
<tr>
<td>46</td>
<td>Pathogenesis of the soft tissue tumors. Fibrous, fibrohistiocytic neoplasms of the soft tissues and tumors of the fat tissue</td>
<td>Dr. Tornóczki Tamás</td>
</tr>
<tr>
<td>47</td>
<td>Tumors of the smooth- and striated muscle. Synovial neoplasms, tumors of the peripheral nerves, PNET</td>
<td>Dr. Tornóczki Tamás</td>
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<tr>
<td>48</td>
<td>IX. NEPHROLOGY (6 LECTURES)</td>
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<tr>
<td>48</td>
<td>Renal failure.</td>
<td>Dr. Kereskai László</td>
</tr>
<tr>
<td>49</td>
<td>Cystic diseases of the kidney.</td>
<td>Dr. Kereskai László</td>
</tr>
<tr>
<td>50</td>
<td>Pathogenesis and classification of glomerulonephritis.</td>
<td>Dr. Kereskai László</td>
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<tr>
<td>51</td>
<td>Tubulointerstitial and vascular diseases</td>
<td>Dr. Kereskai László</td>
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<tr>
<td>52</td>
<td>Renal neoplasms</td>
<td>Dr. Kereskai László</td>
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<tr>
<td>53</td>
<td>Pathology of the bladder and ureter.</td>
<td>Dr. Kereskai László</td>
</tr>
<tr>
<td>54</td>
<td>X. PATHOLOGY OF BONE (3 LECTURES)</td>
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<tr>
<td>54</td>
<td>Hereditary, inflammatory and metabolic bone diseases</td>
<td>Dr. Kereskai László</td>
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<tr>
<td>55</td>
<td>Benign bone tumors</td>
<td>Dr. Kereskai László</td>
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<tr>
<td>56</td>
<td>Malignant bone tumors</td>
<td>Dr. Kereskai László</td>
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</tbody>
</table>

*Practica*
Seminars

1. week: PULMONOLOGY
   Preparations: 1. Supraglottic carcinoma of the larynx
                  2. NRDS
                  3. Bronchiectasis
                  4. Bronchial carcinoma
                  5. Mesothelioma
                  6. Silicosis
   Slides: 1. NRDS
           2. Aspergillosis of the lung
           3. CMV lung
           4. Bronchial asthma
           5. Silicosis
           6. Microcellular carcinoma of the lung
           7. Planocellular carcinoma of the lung
           8. Lepidic adenocarcinoma

2. week: PULMONOLOGY
   Preparations: 1. Supraglottic carcinoma of the larynx
                  2. NRDS
                  3. Bronchiectasis
                  4. Bronchial carcinoma
                  5. Mesothelioma
                  6. Silicosis
   Slides: 1. NRDS
           2. Aspergillosis of the lung
           3. CMV lung
           4. Bronchial asthma
           5. Silicosis
           6. Microcellular carcinoma of the lung
           7. Planocellular carcinoma of the lung
           8. Lepidic adenocarcinoma

3. week: GASTROENTEROLOGY
   Preparations: 7. Esophageal diverticulum
                 8. Achalasia
                 9. Esophageal carcinoma
                10. Penetrating, chronic, ventricular ulcer (penetrating into pancreas)
                11. Exophyticly growing carcinoma of the stomach
                12. Pyloric carcinoma
                13. Crohn’s disease
                14. Colonic diverticulosis
                15. Ulcerative colitis
                16. Rectal polyp (repetition)
                17. Rectal adenocarcinoma (repetition)
                18. Linitis plastica and Krukenberg tumor
   Slides: 9. Pleiomorphic adenoma
           10. Helicobacter pylori infection (Warthin-Starry)
           11. Coeliac - subtotal/total villus atrophy (Marsh 3c)
           12. Crohn disease
           13. Carcinoid of the appendix
           14. Rectal adenocarcinoma

4. week: LIVER, BILIARY TRACT, PANCREAS
   Preparations: 19. Polycystic disease of liver and kidney
                  20. Echinococcus cysts in the liver
                  21. Macronodular (postnecrotic) cirrhosis
                  22. Focal nodular hyperplasia
                  23. Hepatocellular carcinoma
                  24. Adenocarcinoma of the gall bladder with multiple liver metastases
                  25. Pancreatic carcinoma
Slides:
15. Fibrocystic liver lesion
16. HBs-antigen positivism (Shikata-orcein)
17. Alcoholic hepatitis
18. Hepatocellular carcinoma in cirrhosis

5. week: HAEMATOLOGY
Preparations:
27. Burkitt’s lymphoma
28. Multiple myeloma
29. CML - extreme splenomegaly
30. Lymphomatous polyposis of small and large intestine

Slides:
19. Toxoplasma lymphadenitis
20. Follicular lymphoma
21. CLL/SLL infiltration in lymph node
22. Diffuse large B-cell lymphoma
23. Hodgkin lymphoma
24. CML, CP smear

6. week: HAEMATOLOGY
Preparations:
27. Burkitt’s lymphoma
28. Multiple myeloma
29. CML - extreme splenomegaly
30. Lymphomatous polyposis of small and large intestine

Slides:
19. Toxoplasma lymphadenitis
20. Follicular lymphoma
21. CLL/SLL infiltration in lymph node
22. Diffuse large B-cell lymphoma
23. Hodgkin lymphoma
24. CML, CP smear

7. week: MALE GENITALS AND URINARY TRACT
Preparations:
31. Prostate adenocarcinoma
33. Mixed germ-cell tumor; seminoma and teratoma
34. Penile carcinoma

Slides:
25. Prostatic adenocarcinoma
26. Seminoma
27. Mixed germ cell tumor: teratoma and embryonal carcinoma

8. week: FEMALE GENITAL TRACT
Preparations:
35. Carcinoma of the cervix
36. Endometrial polyp
37. Carcinoma of the uterine corpus
38. Tuboovarial abscess
39. Mucinous, multilocular cystadenoma of the ovary
40. Thecomiroid fibroma of the ovary
41. Dermoid cyst (repetition)
42. Dysgerminoma
43. Hydatidiform mole
44. Fibroadenoma of the breast (repetition)
45. Carcinoma of the breast (repetition)
46. Mastitis carcinomatosa
47. Paget disease
48. Serous papillary adenocarcinoma of fallopian tube
49. Teratoma of the ovary (embryonal)

Slides:
28. Endometrial adenocarcinoma (curettage)
29. Serous papillary cystadenocarcinoma of the ovary
30. Hydatidiform mole
31. Intraductal papilloma
32. Paget-disease
33. Invasive ductal carcinoma
34. Mucinous carcinoma
9. week: Female genital tract
Preparations:
35. Carcinoma of the cervix
36. Endometrial polyp
37. Carcinoma of the uterine corpus
38. Tuboovarial abscess
39. Mucinous, multilocular cystadenoma of the ovary
40. Thecofibroma of the ovary
41. Dermoid cyst (repetition)
42. Dysgerminoma
43. Hydatidiform mole
44. Fibroadenoma of the breast (repetition)
45. Carcinoma of the breast (repetition)
46. Mastitis carcinomatosa
47. Paget disease
48. Serous papillary adenocarcinoma of fallopian tube
49. Teratoma of the ovary (embryonal)

Slides:
28. Endometrial adenocarcinoma (curettage)
29. Serous papillary cystadenocarcinoma of the ovary
30. Hydatidiform mole
31. Intraductal papilloma
32. Paget disease
33. Invasive ductal carcinoma
34. Mucinous carcinoma

10. week: Neuropathology
Preparations:
50. Epidural haemorrhage
51. Subdural haemorrhage
52. Subarachnoidal haemorrhage
53. Secondary hemorrhage of the pons, hematocephalus
54. Meningioma
55. Glioblastoma
56. Medulloblastoma
57. Multiple brain metastases
58. Cerebral atrophy (repetition)
59. Multiple sclerosis
60. Anencephalia

Slides:
35. Oligodendroglioma
36. Glioblastoma
37. Senile plaques and neurofibrillar degeneration
38. Prion disease, spongiform encephalopathy

11. week: ENDOCRINOLOGY AND SOFT TISSUES
Preparations:
61. Craniopharyngeoma
62. Suprarenal cortical adenoma
63. Papillary carcinoma of the thyroid gland

Slides:
39. Subacute granulomatous thyreoiditis (De Quervain)
40. Papillary carcinoma of the thyroid
41. Graves disease
42. Hashimoto thyreoiditis
43. Parathyroid adenoma
44. Phaeochromocytoma
45. LeiomyOSA-rcoma
46. Myxoid lipOSA-rcoma

12. week: NEPHROPATHOLOGY
Preparations:
64. Polycystic kidney (infantile sponge kidney)
65. Polycystic kidney (adult type)
67. Nephrosclerosis
68. Congenital hydronephrosis
69. Clear cell carcinoma of kidney
70. Wilms’ tumor
13. week: NEPHROPATHOLOGY
Preparations: 64. Polycystic kidney (infantile sponge kidney)
65. Polycystic kidney (adult type)
67. Nephrosclerosis
68. Congenital hydronephrosis
69. Clear cell carcinoma of the kidney
70. Wilms’ tumor
71. Urothelial carcinoma of the bladder
Slides: 47. Rapidly progressive GN with crescents
48. Hyalinised glomeruli
49. Kimmelstiel Wilson syndrome
50. Clear cell carcinoma of the kidney
51. Urothelial carcinoma of the renal pelvis

14. week: PATHOLOGY OF BONES
Preparations: 72. Aneurysmal bone cyst
73. Osteogenic sarcoma
74. Chondrosarcoma
Slides: 52. Giant cell tumor of bone (osteoclastoma)

Seminars in Oral Pathology (Dr. Tornóczki Tamás):
   Slides: Oral lichen, Orofacial actinomycosis
   Slides: Keratinizing squamous metaplasia, Squamous cell papilloma, Keratoacanthoma.
   Slides: Verrucous squamous cell carcinoma, Squamous cell carcinoma, Nasopharyngeal carcinoma (lymphoepithelioma) + EBER-RNA-ISH
6. Benign and malignant mesenchymal lesions of the oral cavity and the jaws.
   Slides: Epulis (peripheral giant cell granuloma), Plasmocellular granuloma (epulis), Pyogenic granuloma, Buccal fibroma, Granular cell tumour (Abrikosoff), Fibrous dysplasia of the jaw
   Slides: Sialoadenitis chronica in the submandibular gland (Küttner’s tumour), Lymphoepithelial cyst (intraparotideal), Mucokele (extravasating type), Sjögren syndrome
   Slides: Mixed tumour (pleiomorph adenoma), Warthin tumour (cystadenoma papillare lymphomatosum)
11-12. Malignant salivary gland tumours.
   Slides: Adenoid cystic carcinoma, Mucoepidermoid carcinoma
   Slides: Radicular cyst, Ameloblastoma (unicystic), Odontogenic keratocyst (keratocystic odontogenic tumour).

Oral Pathology Practice (slide seminar):
1. squamous cell papilloma
2. keratoacanthoma
3. squamous cell carcinoma
4. nasopharyngeal carcinoma (lymphoepithelioma)
5. keratinizing squamous metaplasia
6. epulis (peripheral giant cell granuloma)
7. pyogenic granuloma
8. buccal fibroma
9. granular cell tumour (Abrikosoff)
10. orofacial actinomycosis
11. sialoadenitis chronica in the submandibular gland (Küttner’s tumour)
12. lymphoepithelial cyst (intraparotideal)
13. mucocele (extravasating type)
14. Sjögren syndrome
15. mixed tumour (pleiomorph adenoma)
16. Warthin tumor (cystadenoma papillare lymphomatous)
17. adenoid cystic carcinoma
18. mucoepidermoid carcinoma
19. fibrous dysplasia of the jaw
20. ameloblastoma (unicystic)
21. oral lichen
22. verrucous squamous cell carcinoma
23. plasmocellular granuloma (epulis)
24. radicular cyst
25. odontogenic keratocyst (keratocystic odontogenic tumour).

Exam topics/questions

THEORETICAL QUESTIONS

I. DERMATOPTHAPATHOLOGY
1. Melanocytic lesions
2. Epithelial tumours of the skin
3. Inflammatory skin diseases

II. PATHOLOGY OF THE GASTROINTESTINAL TRACT
4. Developmental malformations of the face. Inflammatory and tumorous diseases of the oral cavity.
5. Pathology of the salivary glands
6. Diseases of the oesophagus
7. Inflammatory and ulcerative disorders of the stomach
8. The benign and malignant tumours of the stomach
10. Diverticulosis of the colon. Pathology of colonic polyps
11. Crohn’s disease and ulcerative colitis
12. Colorectal malignancies and their relationship to polyposis lesions.
13. Diseases of the appendix and the peritoneum (appendicitis, mucocele, peritonitis, retroperitoneal sclerosis, pseudomyxoma of the peritoneum).

III. NEPHRO- AND UROPATHOLOGY
15. Glomerulonephritis: classification according to clinical symptoms. Histologic alterations in glomerulonephritides
17. IgA nephropathy, chronic glomerulonephritis. Glomerular lesions associated with systemic disorders (SLE, Henoch-Schönlein purpura, Wegener’s granulomatosis, amyloidosis)
19. Acute tubular necrosis (ischaemic and toxic). Drug-induced (hypersensitive) interstitial nephritis, analgetic nephropathy, urate nephropathy. Acute and chronic pyelonephritis (pathogenesis, morphology, consequences and clinical course)
20. Benign and malignant nephrosclerosis and diffuse cortical necrosis. Urolithiasis and obstructive uropathy
21. Renal tumours (oncocytoma, renocellular cancer, Wilms’ tumor, urothelial carcinoma of the renal pelvis)
22. Cystitides, tumours of the bladder and ureter

IV. HAEMATOPATHOLOGY
23. Reactive lymph node changes
24. Indolent B cell lymphomas (FL, CLL, MCL, MZL)
25. High grade B cell lymphomas (BL, DLBCL). Plasma cell neoplasms
26. Hodgkin lymphoma
27. T/NK cell lymphomas.
28. Non-neoplastic bone marrow disorders
29. AML and MDS
30. Myeloproliferative neoplasms

V. PATHOLOGY OF LIVER, BILE DUCTS, PANCREAS
32. Acute viral hepatitis (etiopathology, pathomorphology, complicated forms)
33. Chronic viral hepatitis (etiopathology, types; pathomorphology and differential diagnostics, detection of virus associated antigens and their significance)
34. Cirrhosis and hepatic failure
35. Tumours and tumour-like conditions of the liver
36. Choledolithiasis (etiopathology and complications) and pathology of the extrahepatic biliary tract
37. Acute and chronic pancreatitis. Tumours of the pancreas

VI. PATHOLOGY MALE GENITAL TRACT
38. Congenital malformations, inflammations and tumors of the penis
39. Prostatitides. Hyperplasia of the prostate, complications
40. Tumours of the prostate
41. Congenital abnormalities and inflammatory diseases of the testes. Pathology of the appendices of the testis (epididymis, spermatic cord)
42. Testicular tumours, classification, tumour markers

VII. PATHOLOGY OF FEMALE GENITAL TRACT
43. Vulvovaginitides, venereal infections, PID
44. Benign epithelial lesions of the vulva. Tumors of the vulva and vagina.
45. Inflammations, tumour-like lesions and tumours of the cervix. Carcinoma of the cervix (pathogenesis, pathomorphology, screening).
47. Epithelial benign and malignant tumours of the uterine corpus.
49. Cysts and tumours of the ovaries (surface epithelial, germ cell, sex cord-stromal tumours, metastases)
50. Pathology of pregnancy I (implantation disorders, gestosis, trophoblastic tumours)
51. Pathology of pregnancy II (transplacental infections, chromosomal aberrations)
52. Mastitides (lactational, ductus ectasia, fat necrosis, galactocele). Mastopathies (fibrocytic change). Fibroepithelial tumours.

VIII. NEUROPATHOLOGY
54. Cerebral edema, hydrocephalus, malformations of the brain
55. Dementias and neurodegenerative disorders
56. Demyelinisation disorders
57. Infectious diseases of the CNS
58. Cerebrovascular diseases, intracranial haemorrhages
59. Glial central nervous system tumors
60. Non-glial central nervous system tumors

IX. ENDOCRINOPATHOLOGY AND PATHOLOGY OF SOFT TISSUES
61. Anterior lobe pituitary tumours and their consequences. Posterior lobe syndromes. Disorders associated with hypopituitarism (Sheehan’s syndrome, chromophobit adenoma, empty sella syndrome, suprasellar tumours)
62. Inflammatory, tumorous diseases as well as disorders associated with hyperplasia of the thyroid gland.
63. Pathology of the parathyroid glands (hyperplasia, adenoma, causes of hypoparathyroidism). Multiple endocrine neoplasms.
64. Causes and clinical consequences of hyperplasia and atrophy of the suprarenal gland. Cortical tumours of the suprarenal gland (morphology, clinical syndromes) Cortical insufficiency of the suprarenal gland. Tumors of the adrenal medulla.
66. Tumours of adipose tissue and peripheral nerves, synovial sarcoma.
67. Tumours of smooth- and striated muscle (leiomyoma, leiomyOSA-rcoma, rhabdomyoma and rhabdomyOSA-rcoma, types)

X. PATHOLOGY OF BONES
68. Hereditary, inflammatory and metabolic bone diseases
69. Benign and malignant bone tumours
From Pathology 1

CARDIOVASCULAR PATHOLOGY
70. Angina pectoris, chronic ischemic heart disease, sudden cardiac death.
71. Clinicopathology of acute myocardial infarction.
72. Pathology of the valvular disorders (inflammatory and degenerative ones).
73. Cardiomyopathies, Tumors and tumor-like conditions of the heart.
74. Myocarditis. Pathology of the pericardium.
75. Congenital heart diseases.
76. Arteriosclerosis. Types and clinicopathology of the aneurysms.

PATHOLOGY OF THE RESPIRATORY TRACT
78. Diseases of the upper airways
80. Infectious disorders of the lower airways.
81. General characteristics and types of chronic obstructive lung diseases.
82. Chronic restrictive lung diseases
83. Vascular diseases of the lung
84. Lung tumors
85. Pleural and mediastinal disorders

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

Participants
Dr. Kravják András (KRAFAAO.PTE), Dr. Semjén Dávid (SEDFABO.PTE), Dr. Tornóczki Tamás (TOTMABO.PTE)
### Oral Surgery: Basics

#### Course director:

<table>
<thead>
<tr>
<th>OSP-SZP</th>
<th>Oral Surgery: Basics</th>
<th>DR. LAJOS OLA Sz, professor</th>
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<td>Department of Dentistry, Oral-, Maxillofacial Surgery</td>
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</table>

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

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

1 – 30

**Prerequisites:**

OSA-ANY completed + OSA-NAN completed + OSP-FPP completed

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### 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

Attendance on lectures and practices is obligatory. No make up for missed classes. Missing more than 20% will automatically reject semester acceptance and the semester has to be repeated.

### Mid-term exams

Making up for missed classes

No possibility.

### Reading material

- **Obligatory literature**
  - Stanley F. Malamed: Local Anesthesia, Mosby 1990

- **Literature developed by the Department**
  - Lecture notes

- **Notes**

- **Recommended literature**

### Lectures

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<tr>
<td>1</td>
<td>Principles of dentoalveolar surgery and the relationship with dental practice  &lt;br&gt;Dr. Szalma József</td>
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<tr>
<td>2</td>
<td>Maxillofacial clinical anatomy  &lt;br&gt;Dr. Szalma József</td>
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<tr>
<td>3</td>
<td>Principles of asepsis and antisepsis  &lt;br&gt;Dr. Szalma József</td>
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<tr>
<td>4</td>
<td>Instrumentation of a clinical oral surgery practice  &lt;br&gt;Dr. Szalma József</td>
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<td>5</td>
<td>Clinical pharmacology of local anesthesia, physiology of pain  &lt;br&gt;Dr. Szalma József</td>
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<tr>
<td>6</td>
<td>Local anesthetic methods in the maxilla.  &lt;br&gt;Dr. Szalma József</td>
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<tr>
<td>7</td>
<td>Local anesthetic methods in the mandible  &lt;br&gt;Dr. Szalma József</td>
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<tr>
<td>8</td>
<td>Extraoral anesthetic methods, the complications of local anesthesia  &lt;br&gt;Dr. Olasz Lajos</td>
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<tr>
<td>9</td>
<td>Typical tooth extractions (using forceps).  &lt;br&gt;Dr. Szalma József</td>
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<tr>
<td>10</td>
<td>Instructions and motivating after extractions  &lt;br&gt;Dr. Szalma József</td>
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<td>11</td>
<td>General systemic diseases in dental practice  &lt;br&gt;Dr. Olasz Lajos</td>
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<tr>
<td>12</td>
<td>Prevention and management of medical emergencies in the dental chair  &lt;br&gt;Dr. Szalma József</td>
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</table>
Antibiotic prophylaxis and therapy
Dr. Szalma József

The role of diagnostic methods making diagnosis
Dr. Olasz Lajos

**Practices**

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

**Seminars**

**Exam topics/questions**

1. Disinfection, sterilization and aseptic methods in dental practice.
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.
10. Type of elevators.
11. The physiology of pain.
13. Extraoral anesthetic methods.
15. Extraction forceps.
17. Specification for the use of elevators.
18. The anatomic property of the teeth by extraction.
20. Instructions and motivating after extractions.
21. The armamentarium for tooth removing.
22. Anatomy of mandibular nerve (V/3).
24. The branches of carotid artery. (Art. carotis int. and ext.)
25. The connection between upper teeth and the maxillary sinus.
27. Management of dental emergency.
28. The type of diagnostic methods making diagnosis in oral surgery.
29. The lymphatic system of head and neck.

**Participants**

Dr. Gelencsér Gábor (GELADOB.PTE), Dr. Olasz Lajos (OLLPAAP.PTE), Dr. Orsi Enikő (OREFABO.PTE), Dr. Szalma József (SZJFACO.PTE), Dr. Vajta László Ferenc (VALMAAO.PTE)
## Topic

The aim of training: students have to make oneself master of base element of dento-alveolar surgery. They have to get information about directive and every day practice of cross infection control.

They have to get practical safety in patient treatment, before therapy they have to question their own patients and plan the steps of therapy. They have to do 30 extractions of teeth with the necessary adjuvant treatment.

## Conditions for acceptance of the semester

Maximum of 15 % absence allowed

## Mid-term exams

According to Codes of Studies and Examinations.

## Making up for missed classes

No possibility

## Reading material

- **Obligatory literature**
- **Literature developed by the Department**
  - Lecture notes
- **Notes**
- **Recommended literature**
  - Stanley F. Malamed: Local Anesthesia, Mosby 1990

## Lectures

## Practices

1-120 Patient treatment in the clinical practice

## Seminars

## Exam topics/questions

## Participants

Dr. Gelencsér Gábor (GELADOB.PTE), Dr. Olasz Lajos (OLLPAAP.PTE), Dr. Orsi Enikő (OREFABO.PTE), Dr. Szalma József (SZJFACO.PTE), Dr. Vajta László Ferenc (VALMAAO.PTE)