## REQUIREMENTS

<table>
<thead>
<tr>
<th>Semi melweis University, Faculty of Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names of the Institutes teaching the subject:</td>
</tr>
<tr>
<td><strong>Department of Pulmonology</strong></td>
</tr>
<tr>
<td><strong>Department of Thoracic Surgery</strong> (Collaborating Institute)</td>
</tr>
</tbody>
</table>

| Name of the subject: | Pulmonology |
| Credits: | 3 |
| Total number of hours: | 42 lectures: 14 practices: 28 |
| Type of the course: | mandatory |

| Academic year: | 2019/2020 |
| Code of the course\(^1\): | AOKPUL047_1A |

| Course director (tutor): | Prof. Dr. Veronika Müller |
| Contact details: | 06-1-355-9733 |
| Position: | professor of medicine, head of department |
| Date of habilitation and reference number: | 7th June, 2010; Ref # 307 |

| Aim of the subject and its place in the curriculum: |
| Teaching course on diagnostics and treatment of respiratory diseases. |

| Location of the course (lecture hall, practice room, etc.): |
| Department of Pulmonology |
| Tőmő str. 25-29, Budapest 1083 |
| Department of Thoracic Surgery |
| Ráth Gy. str. 7-9 (Building III), Budapest 1122 |

| Competencies gained upon the successful completion of the subject: |
| Interpretation of the results of complex lung function studies, blood gas studies, allergic studies and ergospirometry in respiratory diseases, administration of inhaled and oxygen therapy, principles of non-invasive mechanical ventilation in sleep disorders and the acute exacerbations of obstructive airway diseases, principles of the invasive and non-invasive diagnostic methods and the treatment of lung cancer and interstitial lung diseases. Clinical diagnostics and treatment of respiratory infections. Indications and techniques of chest surgical interventions, emergency chest surgery interventions, practical skills. |

| Prerequisite(s) for admission to the subject: |
| Pathology II, internal medicine – prope deutics, microbiology. |

| Minimum and maximum number of students registering for the course, student selection method in case of oversubscription: |
| Minimum of 10 students. |
How to register for the course:
Neptun system.

Detailed thematic of the course:

Summary
From the first semester of 2019/2020 - in accordance with the School of Medicine's instructions - the Pulmonology subject will be taught in a 2-week block format at the Department of Pulmonology (Tőmő str. 25-29., Budapest 1083). During the 2-week clinical block course, students will attend 14 hours of lectures (1 credit) and 28 hours of practices (2 credits) to acquire the required knowledge and practice in pulmonary patient examination, as well as basic diagnostic and therapeutic procedures. The course will include classes on thoracic surgery diagnostics and therapy. The lectures and exercises will be scheduled according to a uniform timetable, however, the exact thematic order may vary from block to block, and will be released at the beginning of the 2-week course.

Course schedule

<table>
<thead>
<tr>
<th>Week #1</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Friday</th>
<th>Week #2</th>
<th>Monday</th>
<th>Tuesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-10:00</td>
<td>Lecture¹</td>
<td>Lecture¹</td>
<td>Lecture¹</td>
<td>Lecture¹</td>
<td>8:00-10:00</td>
<td>Chest surgery (OOI)</td>
<td>Facultative consultation</td>
</tr>
<tr>
<td>10:10-11:30</td>
<td>Thematic practical demonstration²</td>
<td>Thematic practical demonstration²</td>
<td>Thematic practical demonstration²</td>
<td>Thematic practical demonstration²</td>
<td>10:10-11:30</td>
<td>11:30-12:30</td>
<td>Facultative consultation</td>
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<tr>
<td>11:30-12:30</td>
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<td>11:30-12:30</td>
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<tr>
<td>12:30-13:50</td>
<td>Interactive practise³</td>
<td>Interactive practise³</td>
<td>Interactive practise³</td>
<td>Interactive practise³</td>
<td>12:30-13:50</td>
<td>Chest surgery (OOI)</td>
<td></td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>General/specific patient examinations⁴</td>
<td>General/specific patient examinations⁴</td>
<td>General/specific patient examinations⁴</td>
<td>General/specific patient examinations⁴</td>
<td>14:00-16:00</td>
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</table>

Lecture topics (14 x 45’)
- Lung cancer
- Chronic obstructive pulmonary disease
- Pneumonia. Tuberculosis
- Respiratory insufficiency. Non-invasive mechanical ventilation
- Bronchial asthma
- Pulmonary rehabilitation. Smoking cessation
- Lung transplantation. Cystic fibrosis
- Interstitial lung disease
- Pulmonary embolism
- Sleep related breathing disorders
- Thoracic surgery: lung cancer, pneumothorax, pleural effusion, lung transplantation

**Thematic practical demonstration topics** (8 x 45’)
- Lung function measurement laboratory techniques (2x)
- Pulmonary diagnostics (2x)
- Non-invasive ventilation methods
- Oxygen therapy methods
- Inhalation therapy methods
- Pulmonary hypertension

**Interactive practice topics** (8 x 45’)
- Bronchology/skill laboratory examinations (2x)
- Non-invasive ventilation patient care (2x)
- Lung function diagnostics
- Allergology tests
- Sleep laboratory tools/methods
- Pulmonary rehabilitation procedures
- Pleural drainage

**General/specific patient examinations** (12 x 45’)
- Pulmonary department
- Pulmonary-oncology department
- Transplantation department
- Thoracic surgery ambulance/ward

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**Potential overlap(s) with other subjects:**
Internal medicine, cardiology, pharmacology.

**Special training activities required:**
None.

**Policy regarding the attendance and making up absences:**
Classes will be held at pre-announced times. Absence up to 25% of the classes is allowed. Absence over 25% must be made up based on the consultation with the tutor or his/her deputy.

**Means of assessing the students’ progress during the semester:**
During the teaching block, there are no interim tests or examinations. However, having completed certain training practices, teachers may assess the practical knowledge of the students.

**Requirement for acknowledging the semester (signature):**
Attendance at least 75% of the classes.

**Type of the examination:**
Collocvium.
Exam requirements:
1. Attendance at least 75% of the classes
2. Completion of the thoracic surgery test
3. Adequate knowledge of the 3 questions (oral exam)

Information on the chest surgery examination is available on the website of the Department of Thoracic Surgery under the Education tab: [http://semmelweis.hu/mellkassebeszet/education/](http://semmelweis.hu/mellkassebeszet/education/). The exam format will be an online test exam. Students will be able to prepare using notes written by the staff of the Department of Thoracic Surgery. Notes will be available online for students enrolled in the course. Related information is also available on the Department of Thoracic Surgery's website.

Exam questions (oral exam):

I. Principles of diagnostic procedures in respiratory medicine
1. Anatomy of the pleura and the lungs, chest wall deformities
2. Physical examination of patients with respiratory diseases, pathological respiratory sounds
3. Radiological examinations of the lungs: indications and contraindications of plain chest X-rays and radioscopy, radiomorphology of lung diseases
4. Imaging modalities of thoracic organs: indications of HRCT, MRI and US in respiratory diseases
5. Indications of PET-CT in respiratory diseases. The clinical importance of ventilation-perfusion lung scintigraphy.
6. Endoscopic examinations and biopsy techniques in lung disease: indications and contraindications
7. Endoscopic examinations and biopsy techniques in pleural diseases: indications and contraindications
9. Indications and contraindications of bronchodilator reversibility and bronchial provocation tests, interpretation of the results
10. Indications and contraindications of ergospirometry, interpretation of the results
11. The application of allergy tests in pulmonology, indications and contraindications
12. Diagnostics of obstructive sleep apnea
13. Indications of the arterial blood gas test, interpretation of the test results
14. Microbiological examinations in respiratory diseases, diagnostics for pulmonary TB
15. Diagnostic examinations and differential diagnosis of pleural effusion
16. Differential diagnosis of chronic cough, diagnostic examinations
17. Differential diagnosis of haemoptysis, diagnostic examinations
18. Differential diagnosis of acute dyspnoea, diagnostic examinations
19. Differential diagnosis of chronic dyspnoea, diagnostic examinations
20. Differential diagnosis of chest pain in respiratory diseases, diagnostic examinations

II. Clinical aspects of lung diseases I.
1. Pathogenesis, symptoms and inhalation devices for the therapy of COPD
2. Pharmacological and non-pharmacological treatment of stable COPD
3. Symptoms, diagnostics and treatment of COPD exacerbation
4. Pathogenesis, symptoms and inhalation devices for the therapy of bronchial asthma
5. Pharmacological and non-pharmacological treatment of stable asthma
6. Symptoms and treatment of asthma exacerbation (status asthmaticus)
7. Principles and indications of inhalation therapy: types and usage of inhalers, aspects of inhaler choice, and control steps for correct inhaler usage
8. Etiology, symptoms, diagnostics and treatment of community-acquired pneumonia
9. Etiology, symptoms, diagnostics and treatment of hospital-acquired pneumonia
10. Etiology, symptoms, diagnostics and treatment of pulmonary abscess
11. Etiology, symptoms, diagnostics and treatment of pleural empyema
12. Clinical course, symptoms and general principles of the treatment of pulmonary TB. Clinical significance and diagnostic methods of latent TB infection
13. Treatment of pulmonary TB
14. Histological classification, prognosis and general principles of the treatment of primary lung cancer
15. Symptoms, diagnostics and cytostatic treatment of non-small cell lung cancer
16. Targeted therapies and immunotherapy of non-small cell lung cancer
17. Symptoms, diagnosis and treatment of small cell lung cancer
18. Symptoms, diagnosis and treatment of malignant pleural tumors
19. Symptoms, diagnosis and treatment of pneumothorax

III. Clinical aspects of lung diseases II.
1. Etiological classification, symptoms and diagnosis of interstitial lung diseases
2. Symptoms, diagnosis and treatment of idiopathic pulmonary fibrosis
3. Symptoms, diagnosis and treatment of sarcoidosis
4. Etiology, symptoms and treatment of respiratory failure
5. Etiology, symptoms and treatment obstructive sleep apnea
6. Pathogenesis, symptoms and diagnostic algorithm of acute pulmonary embolism
7. Clinical course, treatment and prognosis of acute pulmonary embolism
8. Etiology, symptoms and treatment of pulmonary hypertension
9. Oxygen therapy in respiratory medicine: oxygen therapy devices, indications and contraindications
10. Etiology, symptoms and treatment of pulmonary edema
11. Definition, etiology, symptoms and treatment of bronchiectasis. Cystic fibrosis
12. Rare respiratory diseases: alpha1-antitrypsin-deficiency-related emphysema, hypersensitivity pneumonitis, eosinophilic pulmonary diseases
13. General characteristics and therapeutic principles of pulmonary fungal infections
14. Aspergillus-related lung diseases
15. Indications and contraindications of lung transplantation, medical complications of post-transplant patients
16. Pulmonary diseases associated with immunocompromised conditions
17. Pulmonary manifestations of systemic autoimmune diseases (rheumatoid arthritis, scleroderma, SLE, CVID)
18. Principles, indications and contraindications of non-invasive ventilation in respiratory diseases
19. General medical principles for smoking cessation support and tobacco addiction treatment

Type and method of grading:
At the oral exam, the student's knowledge will be evaluated using a scale of 1 to 5 mark.

How to register for the exam:
Neptun system.

Opportunities to retake the exam:
In accordance with the Semmelweis University Study and Examination Regulations.

Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material):
- http://semmelweis.hu/pulmonologia/english/
- http://semmelweis.hu/mellkassebeszet/education/
<table>
<thead>
<tr>
<th>Signature of the tutor:</th>
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<tr>
<th>Signature(s) of the head(s) of the Institute(s):</th>
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<tr>
<th>Date: 26. September 2019</th>
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<table>
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<tr>
<th>Credit Transfer Committee’s opinion:</th>
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<table>
<thead>
<tr>
<th>Comment of the Dean’s Office:</th>
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<table>
<thead>
<tr>
<th>Signature of the Dean:</th>
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</thead>
</table>

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1 Dékáni Hivatal tölti ki, jóváhagyást követően.
2 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
3 Pl. terepgyakorlat, kórlapelemzés, felmérés készítése stb.
4 Pl. házi feladat, beszámoló, zárthelyi stb. témaköre és időpontja, pótlásuk és javításuk lehetősége.
5 Elméleti vizsga esetén kérjük a tételsor megadását, gyakorlati vizsga esetén a vizsgátatás témakörét és módját.
6 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeink beszámítási módja.
**Requirements**

**Semmelweis University, Faculty of Medicine**  
Name(s) of the Institute(s) teaching the subject:  
1st. Department of Surgery  

**Name of the subject:** Surgery I-II.  
**Credits:** 2+4  
**Total number of hours:** 84  
- **Lectures:** 24  
- **Practices:** 60  
- **Seminars:**  
**Type of the course (mandatory/elective):** mandatory  

**Academic year:** 2019/2020  

**Code of the course:**  

**Course director (tutor):** Dr. László Harsányi  
**Contact details:** 1st. Department of Surgery  
- tel: +36-1-333-5343  
**Position:** university professor, director  
**Date of habilitation and reference number:** 2011.06.09., 319.  

**Aim of the subject and its place in the curriculum:**  
The main objective of the Quaternary Surgery Block is to familiarize students with the general symptoms, diagnostics, and therapeutic decision-making of surgical disorders. Beyond of the basics of surgery we teach students the surgical diseases of the various organ systems, their recognition, and the potential for surgical care. Our primary task is to teach clinical thinking in collaboration with related professionals, leading the student from outpatient specialist care to surgery and post-operative care.  

**Location of the course (lecture hall, practice room, etc.):**  
1st. Department of Surgery, 1082 Budapest, Üllői út 78.  

**Competencies gained upon the successful completion of the subject:**  
Surgery education begins in IV. year and continues throughout the curriculum till the VI. year being the basis of the clinical training. During this time, our main goal is to combine theoretical knowledge and related clinical knowledge with surgical thinking and decision-making.  

**Prerequisite(s) for admission to the subject:**  
In accordance with the Study and Examination Regulations.  

**Minimum and maximum number of students registering for the course:**  
**Student selection method in case of oversubscription:** Based on Neptun registration  
**How to register for the course:** In the Neptun system
Detailed thematic of the course:
This subject is taught in block system. During the 4 week long block the students appearing on 11 days at the Clinic taking part of theoretical and practical sessions. The block closing exam is taking place on the last week. Given that we are dealing with very different topics during the block, we are teaching students on a weekly basis in a rotating system, so fewer students are dealing with a sub-specialty at the same time.

Time schedule:
Within the daily schedule there are lectures for the whole block, case discussions and consultations for 1/3 of the block, and bedside or surgical practice for 1/12 of the block.

Lectures, seminars, case discussions on the following topics:
Surgical concept, types and indications. Surgical preparation, risk assessment
Types of wounds, principles of wound care, surgical infections.
Acute surgical disorders, bleeding, haemorrhage
Intraoperative and postoperative complications. Perioperative care
Principles of Surgical Oncology
Basics of organ transplantation
Surgical techniques

Organ-Specific Surgical Principles:
- Eosophagus and diaphragm surgery
- Gastric surgery
- Benign diseases of the pancreas
- Malignant diseases of the pancreas
- Abdominal hernias. Retroperitoneum.
- Proctological diseases. Benign lesions of the colon.
- Surgery for colorectal tumors
- Liver surgery and portal hypertension
- Surgery for gallbladder and biliary tract
- Surgery for endocrine organs
- Breast Surgery.

Recommended Practical Activities:
- Examination of an acute surgical patient
- Examination of an elective surgical patient
- Wound dressing
- Participation in ambulatory surgical work
- Surgical assistance
- Surgical administration
- Postoperative treatment, medication

Potential overlap(s) with other subjects:
Internal medicine
Radiology
Oncology
Anesthesiology/Intensive therapy

Special training activities required: there is none
<table>
<thead>
<tr>
<th>Policy regarding the attendance and making up absences:</th>
<th>In accordance with the Study and Examination Regulations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means of assessing the students’ progress during the semester:</td>
<td>We use catalogue on the practices. Based on the Semmelweis University’s SZMSZ 3. chapter 17 § 7. attendance on the 75-75% of the Lectures and practices is obligatory.</td>
</tr>
<tr>
<td>Requirement for acknowledging the semester (signature):</td>
<td>At least 75% attendance at the sessions</td>
</tr>
<tr>
<td>Type of the examination:</td>
<td>Oral exam based on the given thematic</td>
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<tr>
<td>Exam requirements:</td>
<td>Oral questions: We request the following topics on the basis of textbooks, lectures and practices:</td>
</tr>
<tr>
<td></td>
<td><strong>General surgery</strong></td>
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<tr>
<td></td>
<td>Wound infections symptoms and treatment</td>
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<td></td>
<td>Surgical indications and abdominal incisions</td>
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<td></td>
<td>Postoperative care, postoperative complications</td>
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<td></td>
<td>Possibilities and significance of perioperative nutrition</td>
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<td></td>
<td>Surgical oncology I. (diagnostics)</td>
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<td></td>
<td>Surgical oncology II. (therapy)</td>
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<td></td>
<td>Acute abdominal diseases (differential diagnosis, treatment)</td>
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<td></td>
<td>Basics of organ transplantation</td>
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<td><strong>Organ Specific Surgery:</strong></td>
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<tr>
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<td>Disease of the adrenal gland, surgical consequences</td>
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<td>Struma (symptoms, diagnosis, treatment)</td>
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<td>Thyroid gland tumors (symptoms, diagnosis, treatment)</td>
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<td>Surgical diseases of the parathyroid gland</td>
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<td>Hiatal hernia – GERD</td>
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<td>Esophageal diverticulum, achalasia, injury (corrosive, perforation)</td>
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<td>Esophageal tumors (symptoms, diagnosis, treatment)</td>
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<td>Stomach and duodenal ulcer</td>
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<td>Gastric tumors (symptoms, diagnosis, treatment)</td>
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<td>Gallstones (symptoms, diagnosis, treatment, complications)</td>
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<td>Tumors of the biliary system (biliary tract, gallbladder)</td>
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<td>Benign liver tumors (symptoms, differential diagnosis, treatment)</td>
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<tr>
<td></td>
<td>Primary and metastatic liver tumors (symptoms, diagnosis, treatment)</td>
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<tr>
<td></td>
<td>Acute pancreatitis (symptoms, diagnosis, treatment, complications)</td>
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<td></td>
<td>Chronic pancreatitis (symptoms, diagnosis, treatment)</td>
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<td></td>
<td>Pancreas tumors - radical and palliative options</td>
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<td>Colorectal polyp, polyposis syndromes, colon diverticulosis</td>
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<td>Colon cancer (symptoms, diagnosis, treatment)</td>
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<td>Inflammatory bowel diseases - surgical consequences of IBD</td>
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<td>Hemorrhoids, perianal fistula, fissura ani, anorectal abscess</td>
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<td>Anorectal cancer (symptoms, diagnosis, treatment)</td>
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<td>Hernia: definition, types, symptoms</td>
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<td>Treatment of hernia</td>
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<td>Complications of abdominal hernias</td>
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<td>Benign breast diseases (symptoms, diagnosis, treatment)</td>
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<td>Malignant tumors of the breast (symptoms, diagnosis, treatment)</td>
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</tbody>
</table>
**Type and method of grading**: Oral exam of three theses (general and organ specific surgery + traumatology)

**How to register for the exam**: In the Neptun system

**Opportunities to retake the exam**: In accordance with the Study and Examination Regulations.

**Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material)**:
- Hungarian: Sebészet Horváth Örs Péter - Oláh Attila (szerkesztők)
  Sebészet (10. kiadás) Gaál Csaba (szerkesztő)
  Sebészeti műtéttan Boros Mihály (szerkesztő)
  Littmann Sebészeti műtéttan Horváth Örs Péter - Kiss János

**Signature of the tutor**:

**Signature(s) of the head(s) of the Institute(s)**:

**Date**:

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**Credit Transfer Committee’s opinion**:

**Comment of the Dean’s Office**:

**Signature of the Dean**:

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1 Dékáni Hivatal tölti ki, jóváhagyást követően.
2 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
3 Pl. terepgyakorlat, körültelemzés, felmerés készítése stb.
4 Pl. házi feladat, beszámoló, zárhelyi stb. témakör és időpontja, pótlásuk és javításuk lehetősége.
5 Elméleti vizsga esetén kérjük a tételsor megadását, gyakorlati vizsga esetén a vizsgásztatás témakörét és módját.
6 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeink beszámítási módja.
### REQUIREMENTS

**Semmelweis University, Faculty of Medicine**

**Name(s) of the Institute(s) teaching the subject:**
1st. Department of Surgery

**Name of the subject:** Surgery I-II.

**Credits:** 2+4

**Total number of hours:** 84
- **lectures:** 24
- **practices:** 60
- **seminars:**

**Type of the course (mandatory/elective):** mandatory

**Academic year:** 2019/2020

**Code of the course:**

**Course director (tutor):** Dr. Gábor István

**Contact details:** 1st. Department of Surgery  tel: +36-1-3754291

**Position:** director

**Date of habilitation and reference number:** 2011. (320)

**Aim of the subject and its place in the curriculum:**
The main objective of the Quaternary Surgery Block is to familiarize students with the general symptoms, diagnostics, and therapeutic decision-making of surgical disorders. Beyond of the basics of surgery we teach students the surgical diseases of the various organ systems, their recognition, and the potential for surgical care. Our primary task is to teach clinical thinking in collaboration with related professionals, leading the student from outpatient specialist care to surgery and post-operative care.

**Location of the course (lecture hall, practice room, etc.):**
2nd. Department of Surgery, 1125 Budapest, 4 Kútvölgyi str..

**Competencies gained upon the successful completion of the subject:**
Surgery education begins in IV. year and continues throughout the curriculum till the VI. year being the basis of the clinical training. During this time, our main goal is to combine theoretical knowledge and related clinical knowledge with surgical thinking and decision-making.

**Prerequisite(s) for admission to the subject:**
In accordance with the Study and Examination Regulations.

**Minimum and maximum number of students registering for the course:**

**Student selection method in case of oversubscription:** Based on Neptun registration

**How to register for the course:** In the Neptun system
Detailed thematic of the course:
This subject is taught in block system. During the 4 week long block the students appearing on 11 days at the Clinic taking part of theoretical and practical sessions. The block closing exam is taking place on the last week. Given that we are dealing with very different topics during the block, we are teaching students on a weekly basis in a rotating system, so fewer students are dealing with a sub-specialty at the same time.

Time schedule:
Within the daily schedule there are lectures for the whole block, case discussions and consultations for 1/3 of the block, and bedside or surgical practice for 1/12 of the block.

Lectures, seminars, case discussions on the following topics:
- Surgical concept, types and indications. Surgical preparation, risk assessment
- Types of wounds, principles of wound care, surgical infections.
- Acute surgical disorders, bleeding, haemorrhage
- Intraoperative and postoperative complications. Perioperative care
- Principles of Surgical Oncology
- Basics of organ transplantation
- Surgical techniques

Organ-Specific Surgical Principles:
- Eosophagus and diaphragm surgery
- Gastric surgery
- Benign diseases of the pancreas
- Malignant diseases of the pancreas
- Abdominal hernias. Retroperitoneum.
- Proctological diseases. Benign lesions of the colon.
- Surgery for colorectal tumors
- Liver surgery and portal hypertension
- Surgery for gallbladder and biliary tract
- Surgery for endocrine organs
- Breast Surgery.

Recommended Practical Activities:
- Examination of an acute surgical patient
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- Wound dressing
- Participation in ambulatory surgical work
- Surgical assistance
- Surgical administration
- Postoperative treatment, medication

Potential overlap(s) with other subjects:
Internal medicine
Radiology
Oncology
Anesthesiology/Intensive therapy

Special training activities required: there is none
**Policy regarding the attendance and making up absences:** In accordance with the Study and Examination Regulations.

**Means of assessing the students’ progress during the semester**: We use catalogue on the practices. Based on the Semmelweis University’s SZMSZ 3. chapter 17 § 7. attendance on the 75-75% of the Lectures and practices is obligatory.

**Requirement for acknowledging the semester (signature):**
At least 75% attendance at the sessions

**Type of the examination:**
Oral exam based on the given thematic

**Exam requirements:**

**Oral questions:** We request the following topics on the basis of textbooks, lectures and practices:

**General surgery**
- Wound infections symptoms and treatment
- Surgical indications and abdominal incisions
- Postoperative care, postoperative complications
- Possibilities and significance of perioperative nutrition
- Surgical oncology I. (diagnostics)
- Surgical oncology II. (therapy)
- Acute abdominal diseases (differential diagnosis, treatment)
- Basics of organ transplantation

**Organ Specific Surgery:**
- Disease of the adrenal gland, surgical consequences
- Struma (symptoms, diagnosis, treatment)
- Thyroid gland tumors (symptoms, diagnosis, treatment)
- Surgical diseases of the parathyroid gland
- Hiatal hernia – GERD
- Esophageal diverticulum, achalasia, injury (corrosive, perforation)
- Esophageal tumors (symptoms, diagnosis, treatment)
- Stomach and duodenal ulcer
- Gastric tumors (symptoms, diagnosis, treatment)
- Gallstones (symptoms, diagnosis, treatment, complications)
- Tumors of the biliary system (biliary tract, gallbladder)
- Benign liver tumors (symptoms, differential diagnosis, treatment)
- Primary and metastatic liver tumors (symptoms, diagnosis, treatment)
- Acute pancreatitis (symptoms, diagnosis, treatment, complications)
- Chronic pancreatitis (symptoms, diagnosis, treatment)
- Pancreas tumors - radical and palliative options
- Colorectal polyp, polyposis syndromes, colon diverticulosis
- Colon cancer (symptoms, diagnosis, treatment)
- Inflammatory bowel diseases - surgical consequences of IBD
- Hemorrhoids, perianal fistula, fissura ani, anorectal abscess
- Anorectal cancer (symptoms, diagnosis, treatment)
- Hernia: definition, types, symptoms
- Treatment of hernia
- Complications of abdominal hernias
- Benign breast diseases (symptoms, diagnosis, treatment)
- Malignant tumors of the breast (symptoms, diagnosis, treatment)
<table>
<thead>
<tr>
<th><strong>Type and method of grading</strong>&lt;sup&gt;6&lt;/sup&gt;: Oral exam of three theses (general and organ specific surgery + traumatology)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>How to register for the exam</strong>: In the Neptun system</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Opportunities to retake the exam</strong>: In accordance with the Study and Examination Regulations.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material)</strong>:</th>
</tr>
</thead>
</table>

Textbook of Surgery - David Sabiston  
Oxford Handbook of Clinical Surgery - Greg R. McLatchie  
Essentials of General Surgery - Peter F. Lawrence  

<table>
<thead>
<tr>
<th><strong>Signature of the tutor</strong>:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Signature(s) of the head(s) of the Institute(s)</strong>:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Date</strong>:</th>
</tr>
</thead>
</table>

---

Credit Transfer Committee’s opinion:

Comment of the Dean’s Office:

Signature of the Dean:

---

<sup>1</sup> Dékáni Hivatal tölti ki, jóváhagyást követően.

<sup>2</sup> Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámokra külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!

<sup>3</sup> Pl. terepgyakorlat, kórlapelemzés, felmérés készítése stb.

<sup>4</sup> Pl. házi feladat, beszámoló, zárhelyi stb. témaköre és időpontja, pótlásuk és javításuk lehetősége.

<sup>5</sup> Elméleti vizsga esetén kérjük a tételsor megadását, gyakorlati vizsga esetén a vizsgázatás témakörét és módját.

<sup>6</sup> Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeink beszámítási módja.
Semmelweis University, Faculty of Medicine
Name(s) of the Institute(s) teaching the subject: Department of Traumatology

Name of the subject: Traumatology
Credits: 3
Total number of hours: 42 lectures: 0 practices: 30 seminars: 12
Type of the course (mandatory/elective): Mandatory

Academic year: 2019/2020
Code of the course¹: AOKTRA687_1A

Course director (tutor): Prof. Dr. Hangody László
Contact details: Semmelweis University Traumatology Department
Tel: 06 1 467 3851
Position: Head of department
Date of habilitation: May 24, 2003
Reference number: 10/2003

Aim of the subject and its place in the curriculum:
Traumatology as a specialty deals with the treatment of injured patients, independent of the injured organ, patient’s age or previous diseases. In developed countries, the 4-5th leading cause of death is injury, while in the actively working population, the rate of death is even higher. Morbidity in children and in the elderly is also high. Traumatology treatment for the most part deals with extremity surgery in correlation to orthopedics, however cranial, thoracal, abdominal, spinal and pelvic injuries as well as the treatment of polytraumatized patients also belong to the field of trauma care.

Location of the course (lecture hall, practice room, etc.):
- Uzsoki Hospital, Department of Orthopedics-Traumatology, Conference room (ground floor) 1145 Budapest, Uzsoki street 29-41.
- Péterfy Traumatology Center, Conference room (8th floor) 1081 Budapest, Fiumei street 17.

Competencies gained upon the successful completion of the subject:
During practices, students will have the opportunity to learn the following: physical examination of injured patients, bandaging, suturing, casting techniques, and the uses of ortheses and splints. Students will have the opportunity to enter the operating theater, scrubbing, and become acquainted with special instruments used in Traumatology. Consultation of typical and the more frequent trauma cases, radiologic diagnostics, as well as videos in the operative theater are also part of the curriculum. During on duty shifts, students will have an opportunity to examine and participate in the trauma care of patients under supervision.
<table>
<thead>
<tr>
<th><strong>Prerequisite(s) for admission to the subject:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pathology II, Internal Medicine, Basic Surgical Techniques</strong></td>
</tr>
</tbody>
</table>

| **Minimum and maximum number of students registering for the course:** |
| **Student selection method in case of oversubscription:** |
| Minimum: 6 |
| Maximum: 21 |

| **How to register for the course:** |
| Neptun |
Detailed thematic of the course:

**Lectures**

*Traumatology lectures are available on Semmelweis University’s E-learning portal (moodle)*

2. Fracture management. Bone healing
3. Immediate care and major accidents. (Multiple injuries, shock, major disasters)
4. Thoracic and abdominal trauma
6. Pelvic injuries. Femoral fractures (proximal femur and shaft)
7. Fractures of the tibia and fibula. Injuries of the ankle, talus, calcaneus and the foot
8. Knee Injuries. Cartilage repair, ligament surgeries
9. Injuries of the upper extremity
10. Hand injuries
11. Pediatric trauma

**Traumatology block schedule for 4th year medical students**
The Traumatology Department reserves the right to make changes to the order of practices depending on which institute the student attends the practice at.

### Potential overlap(s) with other subjects:
Orthopedics, First aid, Sports Medicine, Neurotraumatology, Hand Surgery

### Special training activities required:
-
### Policy regarding the attendance and making up absences:

According to the SZMSZ 17§ 7. regulation of Semmelweis University, the attendance of minimum 75% of seminars and practices is necessary.

### Means of assessing the students’ progress during the semester:

The interactive seminars and practices allows for the assessment of students’ progress. There will be no formal test/quiz during the practice week.

### Requirement for acknowledging the semester (signature):

Students must open and read through all the lecture material available on Semmelweis University’s E-learning portal.

Attendance of consultations and practices or repeating of unattended practices and the written exam result is required. We cannot verify the semester, or allow the student to take the midterm if the student did not attend at least 75% of practices during the semester.

Only those students will be allowed to take the exam, who have opened and read through the lecture material and have met the practice attendance minimal requirements.

### Type of the examination:

Written electronic exam (single answer and multiple choice test), on Semmelweis University’s E-learning portal (moodle)

### Exam requirements:

The knowledge of the given textbook, electornical lecture and practice material.

### Type and method of grading:

Written electronic exam (single answer and multiple choice test). Percentage grading, not Bell curve

### How to register for the exam:

Neptun program

### Opportunities to retake the exam:

Retaking of the written electronic exam (single answer and multiple choice test), on Semmelweis University’s E-learning portal (moodle)

Students may take the exam a total of maximum 3 times.
Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material):

**Name of Textbook:**
The Trauma Manual:
TRAUMA AND ACUTE CARE SURGERY
Third edition

Editors:
Andrew B. Peitzman
Michael Rhodes
C. William Schwab
Donald M. Yealy
Timothy C. Fabian

Publisher:
Wolters Kluwer / Lippincott Williams & Wilkins

**Internet**
The lecture material can be downloaded from Semmelweis University’s E-learning portal
https://itc.semmelweis.hu/moodle/?lang=en

**Signature of the tutor:**

**Signature(s) of the head(s) of the Institute(s):**

**Date:**

---

**Credit Transfer Committee’s opinion:**

**Comment of the Dean’s Office:**

**Signature of the Dean:**

---

1 Dékáni Hivatal tölti ki, jóváhagyást követéen.
2 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
3 Pl. terepgyakorlat, kórpanelemzés, felmérés készítése stb.
4 Pl. házi feladat, beszámoló, zárthelyi stb. témaköre és időpontja, pótlásuk és javításuk lehetősége.
5 Elméleti vizsga esetén kérjük a tételser megadását, gyakorlati vizsga esetén a vizsgátatás témakörét és módját.
6 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeink beszámítási módja.
### COURSE REQUIREMENTS

**Semmelweis University, Faculty of Medicine**  
1st. Department of Medicine (Sándor Korányi Department of Medicine)

<table>
<thead>
<tr>
<th>Course name: Internal Medicine – nephrology, gastroenterology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit: 4</td>
</tr>
<tr>
<td>Contact hours: 53 (4-week blocks, 8 times during the semester)</td>
</tr>
<tr>
<td>lecture: 13x1 = 13 hours</td>
</tr>
<tr>
<td>practice (case discussion): 7x1 and 6x2 = 19 hours</td>
</tr>
<tr>
<td>practice (bedside): 7x3 = 21 hours</td>
</tr>
<tr>
<td>Type: <strong>obligatory/elective</strong></td>
</tr>
<tr>
<td>Year: 2019/2020</td>
</tr>
<tr>
<td>Subject code:</td>
</tr>
<tr>
<td>Course director: dr. István Takács</td>
</tr>
<tr>
<td>Title: professor, department head</td>
</tr>
<tr>
<td>Date and number of habilitation: 2011, 328 (Semmelweis University)</td>
</tr>
</tbody>
</table>

**Objective of the course and how it fits in the educational curriculum:**

The primary objective of the course in internal medicine for fourth-year students, who have been acquired the the basic skills of physical examination, is the symptom-based and patient-oriented education of various segments of internal medicine. Internal medicine I comprises **nephrology and gastroenterology** (students have already learned endocrinology and metabolic diseases). Students become familiar with the diagnostics and the treatment of the most common disorders of these disciplines.

**Location:** 1st. Department of Medicine (Sándor Korányi Department of Medicine)  
1083 Budapest, Korányi S. u. 2/a

**Skills obtained by successful completion of the course:**

Education of internal medicine commences in third year by teaching propedeutics, and finishes in the final year - providing a backbone for medical education. Our major objective throughout this period is the integration of the knowledge provided by preclinical and clinical subjects into our curriculum. By the time of graduation, our students – the future doctors – should have up-to-date theoretical and practical knowledge, as well as an ability to make appropriate interpersonal relationship with patients, relatives and medical personnel that together, provides the basis of independent medical decisions.

**Prerequisites of the course:**  
Anatomy, Medical physiology, Microbiology, Pharmacology, Translational medicine, Internal medicine propedeutics

**Number of students (minimum, maximum) required to initiate the course**  
One eighth of the students registered at the Neptun system for the fourth year.

**Registration to the course:**  
Through the Neptun system
Detailed syllabus:

During a 4-week block practice, students spend 9 days in the department, through 3 weeks. Exams are held on the final week. Students are assigned into groups for the case discussions that are held in rotation, resulting in fewer students learning about a given topic at a time. Bedside practices are also held in small groups.

Within the daily schedule, there are lectures for the entire block of students (36-40 students), and case discussion practices in rotation and bedside practices for small groups of students.

Schedule: Weeks #1-2

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture (45’)</td>
<td>Lecture (45’)</td>
<td>Case discussion (90’)</td>
<td></td>
</tr>
<tr>
<td>Break (15’)</td>
<td>Break (15’)</td>
<td>Break (30’)</td>
<td></td>
</tr>
<tr>
<td>Bedside practice (135’)</td>
<td>Bedside practice (135’)</td>
<td>Case discussion (90’)</td>
<td></td>
</tr>
<tr>
<td>Lunch break (60’)</td>
<td>Lunch break (60’)</td>
<td>Lunch break (60’)</td>
<td></td>
</tr>
<tr>
<td>Case discussion (45’)</td>
<td>Case discussion (45’)</td>
<td>Case discussion (45’)</td>
<td></td>
</tr>
<tr>
<td>Break (15’)</td>
<td>Break (15’)</td>
<td>Break (15’)</td>
<td></td>
</tr>
<tr>
<td>Lecture (45’)</td>
<td>Lecture (45’)</td>
<td>Lecture (45’)</td>
<td>Lecture (45’)</td>
</tr>
</tbody>
</table>

Schedule: Week #3

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture (45’)</td>
<td></td>
<td>Case discussion (90’)</td>
<td></td>
</tr>
<tr>
<td>Break (15’)</td>
<td></td>
<td>Break (30’)</td>
<td></td>
</tr>
<tr>
<td>Bedside practice (135’)</td>
<td>Bedside practice (135’)</td>
<td>Case discussion (90’)</td>
<td></td>
</tr>
<tr>
<td>Lunch break (60’)</td>
<td>Lunch break (90’)</td>
<td>Lunch break (60’)</td>
<td></td>
</tr>
<tr>
<td>Case discussion (90’)</td>
<td>Case discussion (90’)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Schedule: Week #4

On the Monday morning, a written test is taken by all students. On the following days (Tuesday/Wednesday/Friday), students continue with a bedside, patient-oriented oral exam.
Nephrology

Lectures:
1. Glomerular diseases
2. Tubulointerstitial and cystic kidney diseases
3. Electrolyte disorders
4. Renal transplantation
5. Differential diagnostics of renal diseases

Case discussions:
1. A young female patient with acute kidney injury and liver dysfunction (90’)
2. Approach to a patient with glomerulonephritis (90’)
3. Dialysis treatment (90’)
4. Management of a patient with chronic kidney disease (45’)
5. Kidney stones, urinary tract infection (45’)
6. Hematuria and proteinuria during pregnancy (45’)

Gastroenterology

Lectures:
1. Disorders of the upper gastrointestinal tract, epigastric pain
2. Diagnosis and differential diagnosis of malabsorption and maldigestion
3. Inflammatory bowel diseases
4. Diagnosis and management of disorders associated with diarrhea or constipation
5. Differential diagnosis of gastrointestinal bleeding
6. Diagnosis and management of acute hepatic failure
   Differential diagnosis of jaundice

Case discussions:
1. Approach to a patient with an abnormal liver function test. (45’)
2. Approach to a patient with acute abdominal pain (90’)
3. Management of a patient with a pancreatic disease (45’)
4. Management of a patient with an inflammation of the large bowel. (90’)
5. Approach to a patient with swallowing difficulty (45’)
6. Celiac disease (45’)
7. Management of a patient with diabetes mellitus (90’)

Subjects (either obligatory or elective) the content of whose may overlap with the current course

Acute abdomen – Surgery
Gastroenteritides – Infectology
Acute kidney injury – Urology, Intensive therapy

Additional assignments to be completed for the course:
None

Required attendance:
According to the rules of the University, students are required to participate on at least 75% of all sessions. This is evaluated through attendance sheets signed by the tutor. Retake of lectures / case discussions is not provided by the Department

Midterm evaluation:
There is no formal midterm evaluation. During case discussions and bedside practices the interaction between students and the tutor provides an opportunity to assess the knowledge of students.
Requirements for obtaining the signature for the course:
Participation on at least 75% of all sessions. At the end of the semester, after the student has taken his/her attendance sheet to the secretariat, the Course Director grants credits to students in the Neptun system.

Exam type: semi-final, written and oral parts
On the first day of the exam week, students take a 60-min written test. After the test, during the following days, a bedside, patient-oriented oral exam is taken. In case of a failure during the written test, oral retake exam is provided on the last day of the exam week.

Exam material:
- Written test from the topics covered by lectures, case discussions and bedside practices.
- Bedside, clinical case-based, practice-oriented oral examination.

Examination grades:
Written test and oral exam both provide 50-50 points. Passing the written test requires at least 25 points (50%). Score-to-grade conversion is as follows:

Registration to the exam:
Through Neptun system

Repeat exams, failed exams:
According to the general rules of the University

Suggested print, electronic, online material
3. Lecture slides provided online after registration (belfi.semmelweis.hu)

Signature of the course director:

Signature of the host institution:
Submission date:

OKB decision:

Notes of the dean:

Deans’ signature:
1 Csak abban az esetben kell megadni, ha a tárgy az adott nyelven is meghirdetésre kerül.
2 Dékáni Hivatal tölti ki, jóváhagyást követően.
3 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
4 Pl. terepgyakorlat, kórlapelemzés, felmérés készítése, stb.
5 Pl. házi feladat, beszámoló, zárthelyi stb. témaköre és időpontja, pótlásuk és javításuk lehetősége.
6 Elméleti vizsga esetén kérjük a tételek megadását, gyakorlati vizsga esetén a vizsgázatás témakörét és módját.
7 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeink beszámítási módja.
**REQUIREMENTS**

<table>
<thead>
<tr>
<th>Semmelweis University, Faculty of Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name(s) of the Institute(s) teaching the subject:</strong> Department of Dermatology, Venereology and Dermatooncology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Name of the subject:</strong></th>
<th>Dermatology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credits:</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Total number of hours:</strong></td>
<td>42</td>
</tr>
<tr>
<td><strong>Lectures:</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Practices:</strong></td>
<td>29</td>
</tr>
<tr>
<td><strong>Seminars:</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>Type of the course (mandatory/elective):</strong></td>
<td>mandatory</td>
</tr>
</tbody>
</table>

| **Academic year:** | 2019/2020 |

| **Code of the course:** |

<table>
<thead>
<tr>
<th><strong>Course director (tutor):</strong></th>
<th>Prof. Miklós Sárdy MD, PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact details:</strong></td>
<td>Semmelweis Egyetem Bőr-, Nemikórtani és Bőronkológiai Klinika, 1085 Budapest Mária utca 41. telsz.: +36208258875</td>
</tr>
<tr>
<td><strong>Position:</strong></td>
<td>chair of Department</td>
</tr>
<tr>
<td><strong>Date of habilitation and reference number:</strong></td>
<td>February 3, 2016, no reference number on the certificate (the habilitation occurred at the LMU Munich)</td>
</tr>
</tbody>
</table>

| **Aim of the subject and its place in the curriculum:** | Knowledge of diagnostics, ethiopathogenesis and treatment of skin diseases concerning the competency of general practitioners |

| **Location of the course (lecture hall, practice room, etc.):** | Budapest 1085 Mária utca 41., Lecture Hall, 2nd Floor II. Room No 209 |

| **Competencies gained upon the successful completion of the subject:** |

<table>
<thead>
<tr>
<th><strong>General competencies:</strong></th>
<th>establishment of previous medical history, effective communication with the patient, physical examination, diagnosis of disease, recommendation of treatment plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject-specific competencies:</strong></td>
<td>description of the dermatological clinical picture using primary and secondary elementary lesions, application of basic topical therapy, treatment of pyodermas and ulcers, treatment of erysipelas, moist-bandage application, identification of chronic venous insufficiency, presumption of arterial occlusive diseases, differentiation and treatment of infections of herpes viruses, HPV infections’ treatment, diagnosis and treatment of onychomycosis and intertrigo, clinical diagnosis and treatment of scabies and pediculosis, recognition of clinical symptoms of gonorrhea, presumption of HIV infection based on clinical symptoms, presumption of syphilis infection based on clinical symptoms, recognition of clinical symptoms of bacterial vaginosis, vulvovaginal candidiasis and non-gonococcal urethritis, recognition of skin cancer cases, presumption of psoriasis and psoriatic arthritis, recognition of clinical symptoms of lichen planus, rosacea, acne, clinical differentiation of bullous diseases, presumption of autoimmune connective tissue disorders, recognition of basic drug related adverse reactions, presumption of toxic epidermal necrolysis based on clinical examination, treatment of acute urticaria and angioedema, recognition of burn and freeze injuries, orientation in the hematoxylin-eosin stained histology specimen of the skin</td>
</tr>
</tbody>
</table>
**Prerequisite(s) for admission to the subject:** Microbiology, pathology, anatomy, biochemistry, physiology

**Minimum and maximum number of students registering for the course:** min. 5, max. 15

**Student selection method in case of oversubscription:** random choice

**How to register for the course:** Via Neptun

**Detailed thematic of the course:**

<table>
<thead>
<tr>
<th>Day</th>
<th>Lectures/Practicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Day</td>
<td>Lecture: Introduction to general dermatologic pathology and diagnostics (Prof. M. Sárdy), Out-patient Unit Practical, Case Study Seminar: Dermatooncology (A. Görög), In-patient Unit Practical</td>
</tr>
<tr>
<td>2nd Day</td>
<td>Out-patient Unit Practical, Out-patient Unit Practical, Special Seminar: Dermatopathology (E. Kurolí), Case Study Seminar: Al Bull. Diseases (M. Fábian)</td>
</tr>
<tr>
<td>3rd Day</td>
<td>Out-patient Unit Practical, Out-patient Unit Practical, Out-patient Unit Practical, Case Study Seminar: Urticara/Eczema (B. Diczig)</td>
</tr>
<tr>
<td>4th Day</td>
<td>Break</td>
</tr>
<tr>
<td>5th Day</td>
<td>Out-patient Unit Practical, Out-patient Unit Practical, Case Study Seminar: Leg Ulcer (A. Bánvölgyi), In-patient Unit Practical</td>
</tr>
<tr>
<td>6th Day</td>
<td>Out-patient Unit Practical, Out-patient Unit Practical, Special Seminar: STI’s (B. Tamási), In-patient Unit Practical</td>
</tr>
<tr>
<td>7th Day</td>
<td>Out-patient Unit Practical, Out-patient Unit Practical, Out-patient Unit Practical, Case Study Seminar: Psoriasis (K. Lőrincz)</td>
</tr>
<tr>
<td>8th Day</td>
<td>Out-patient Unit Practical, In-patient Unit Practical, Written Test for Merit (optional)</td>
</tr>
<tr>
<td>9th Day – 14th Day</td>
<td>Break</td>
</tr>
<tr>
<td>15th Day</td>
<td>Exam</td>
</tr>
</tbody>
</table>

**Potential overlap(s) with other subjects:** microbiology, pathology, anatomy-histology, physiology, pharmacology, internal medicine, infectology, oncology, immunology-allergology, plastic surgery, phlebology, oral pathology, gynecology, urology, psychiatry, biochemistry, clinical genetics.

**Special training activities required:** Attendance of at least 75% of the lectures, seminars, and practicals; passing of the practical exam.

**Policy regarding the attendance and making up absences:** Attendance at the lecture, seminars and practicals is compulsory. 25% (6 practicals/1.5 days) absenteeism is allowed. In the case of absences of more than 25%, the student is required to make up for the absences, which is possible in subsequent intakes.

**Means of assessing the students’ progress during the semester:** Constant observation and evaluation. Written test for merit, in the 2nd week of every intake (optional).

**Requirement for acknowledging the semester (signature):** Attendance of 75% of the lectures, seminars, and practicals.

**Type of the examination:** Semi-final examination
Exam requirements: List of topics

I.
1. Primary and secondary elementary lesions with examples
2. Biological functions of the skin
3. Pathomechanisms and clinical forms of urticaria
4. Management of chronic urticaria
5. Dermatitis (eczema) group, clinical forms, and therapy
6. Atopic dermatitis
7. Types and most frequent causes of drug eruptions
8. Impetigo, folliculitis, furuncle, carbuncle: diseases due to Staphylococci and their therapy
9. Erysipelas, clinical forms, complications, and therapy
10. Forms of cutaneous tuberculosis, their diagnosis, and treatment
11. Atypical mycobacterial infections
12. Clinical forms and treatment of leprosy and leishmaniasis
13. Diseases due to HPV and their treatment
14. Herpes simplex and herpes zoster, clinical forms, complications, and treatment
15. Pityriasis versicolor
16. Microsporia
17. Superficial mycosis (tinea capitis, corporis, pedis, inguinalis)
18. Tinea profunda (deep mycoses)
19. Onychomycosis (tinea unguium)
20. Candidosis
21. Lyme borreliosis

II.
1. Urethral discharge, diagnosis, and management
2. Vaginal discharge, diagnosis, and management
3. Genital herpes virus infections
4. Genital warts
5. Gonococcal infection in men
6. Gonococcal infection in women
7. Chlamydia trachomatis cervicitis and urethritis
8. Complications in men and women
9. Chlamydia trachomatis negative non-gonococcal urethritis
11. Bacterial vaginosis
12. Trichomoniasis
13. Candidosis of the genitalia
14. Scabies
15. Pediculosis
16. HIV infection, AIDS
17. Primary syphilis and differential diagnosis
18. Secondary syphilis
19. Tertiary syphilis
20. Methods of diagnosis in syphilis, BAP

III.
1. Toxic epidermal necrolysis, causes and treatment
2. Pharmacologic side effects of drugs on the skin. Management of drug eruptions
3. Lupus erythematosus, DLE, SLE, SCLE. Clinical forms and treatment
4. Scleroderma
5. Dermatomyositis
6. Basal cell carcinoma
7. Squamous cell carcinoma
8. Premalignant epidermal lesions
9. In situ malignant tumors of the skin
10. Precursor lesions and risk factors for malignant melanoma
11. Malignant melanoma (types, clinical signs, prognostic factors)
12. Pigmented nevi
13. Cutaneous T-cell lymphoma
14. Bullous diseases of autoimmune origin
15. Skin manifestations in diabetes mellitus
16. Skin signs of liver diseases
17. Seborrheic dermatitis, clinical forms, and therapy
18. Rosacea, perioral dermatitis
19. Psoriasis, clinical forms, and therapy
20. Lichen planus
21. Pityriasis rosea
22. Acne, comedo. Clinical froms and therapy
23. Venous diseases of the legs. The postthrombotic syndrome
24. Paraneoplastic skin symptoms
25. Alopecia, clinical forms, and treatment
26. Vasculitis. Erythema multiforme, erythema nodosum
Type and method of grading: A practical exam (clinical examination and discussion of one patient) and a theoretical exam with three randomly selected questions, one taken from each of three main subject areas, compose the semi-final examination.

How to register for the exam: Via Neptun.

Opportunities to retake the exam: On the exam day(s) during the subsequent intakes. After the last rotation block, exam dates will be provided according to the needs of the students.

Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material): BASIC REQUIREMENT: DOIT - Dermatology Online with Interactive Technology http://www.cyberderm.net/

Signature of the tutor:

Signature(s) of the head(s) of the Institute(s):

Date:

Credit Transfer Committee’s opinion:

Comment of the Dean’s Office:

Signature of the Dean:

1 Dékáni Hivatal tölti ki, jóváhagyást követően.
2 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
3 Pl. terepyakorlat, kórlapelemzés, felmérés készítése stb.
4 Pl. házi feladat, beszámoló, zárthelyi stb. témaköre és időpontja, pótlásuk és javításuk lehetősége.
5 Elméleti vizsga esetén kérjük a tételsor megadását, gyakorlati vizsga esetén a vizsgázatátás témakörét és módját.
6 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkéréshez eredményeink beszámítási módja.
### REQUIREMENTS

<table>
<thead>
<tr>
<th>Semmelweis University, Faculty of Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name(s) of the Institute(s) teaching the subject: Department of Family Medicine</td>
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</table>

<table>
<thead>
<tr>
<th>Name of the subject:</th>
<th>Family Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits:</td>
<td>2</td>
</tr>
<tr>
<td>Total number of hours:</td>
<td>20 lectures: 4 practices: 16 seminars: 0</td>
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<tr>
<td>Type of the course (mandatory/elective):</td>
<td>mandatory</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Academic year:</th>
<th>2019/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code of the course¹:</td>
<td>AOKCSA695_1A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course director (tutor):</th>
<th>Prof. Dr. Kalabay László</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact details:</td>
<td>06-1-355-8530</td>
</tr>
<tr>
<td>Position:</td>
<td>Director</td>
</tr>
<tr>
<td>Date of habilitation and reference number:</td>
<td>205/2003</td>
</tr>
</tbody>
</table>

**Aim of the subject and its place in the curriculum:**

Health care is based on the family practice system. It’s important for future doctors to get to know the gatekeeping function of family practices. It’s also important to show them on a one-to-one tutoring basis that family practice is an integrating profession. While getting involved in the work of the family practice medical students are introduced to the preventive approach, the ways of how to solve holistic, complex, bio-psycho-social and somatic problems and the differential diagnostics of frequent diseases. The aim is to teach them how to use and apply the basic means of diagnostic and therapeutic procedures and tools, to give them an insight into the most frequent laws and courses of action they may meet, to develop the medical students’ communication skills in practice and to practise how to work with short interventions.

**Location of the course (lecture hall, practice room, etc.):**

Accredited tutorial practices
The lecture hall of the Department of Family Medicine

**Competencies gained upon the successful completion of the subject:**

- Preventive approach, screening
- Holistic patient care
- Managing complex bio-psycho-social-health problems
- Frequent chronic illness care
- Differential diagnostics
- How to use basic diagnostic tools on their own and how to assess test results
- Basic health-care-connected legal knowledge

**Prerequisite(s) for admission to the subject:**

- Internal medicine propaedeutics, Pharmacology I, Laboratory medicine

**Minimum and maximum number of students registering for the course:**

**Student selection method in case of oversubscription:**

Turn based system.

**How to register for the course:**

To register for the course in the 'Neptun’ system
**Detailed thematic of the course**:  
**Lectures**  
Lectures take place on the first day of the course in a four-hour period in the following categories:  
- Screening procedures  
- Mood- and sleep disorders  
- Musculoskeletal diseases in the practice  
- Diabetes screening and care  
- Gastrointestinal disease care  
- Emergency care in the practice  
- Cardiovascular prevention, hypertonic patient care  
- Supplementary medicine  

**Practices**  
The subject is taught in blocks. Medical students have five lessons in the family practice on one-to-one tutoring basis on the second and the fourth day plus a three-lesson long case discussion with a practical and differential diagnostic approach.  
During the training session in the family practice medical students will get to know and acquire  
- the possible forms of prevention  
- chronic illness care  
- acute illness care  
- the managing of complex bio-psycho-social problems  
- how to use the available diagnostic and therapeutic devices and tools  

The subject of the case discussion includes the most frequent problems in basic care and provides an opportunity to discuss the diagnostic, differential diagnostic and therapeutic ways and possibilities in the following topics in an interactive way:  
- Screening procedures  
- Complex cardiovascular/metabolic diseases  
- Frequent, serious communicable diseases  
- Patients with musculoskeletal diseases that have a strong negative impact on their life  
- Patients with psycho-social problems  

**Potential overlap(s) with other subjects:**  
- Internal medicine  

**Special training activities required**:  
-  

**Policy regarding the attendance and making up absences:**  
It’s compulsory for the student to attend 75 percent of the training sessions.  

**Means of assessing the students’ progress during the semester**:  
During training the tutor checks whether the students have acquired the practical and theoretical content of the training. There is no formal assessment.  

**Requirement for acknowledging the semester (signature):**  
It’s compulsory for the student to attend at least 75 percent of the training sessions.  

**Type of the examination:**  
Assessment of how actively the student has participated in the training by the tutor.  
Compiling a 3-4,000 character case study based on what students have learnt through the training period in one of the topics given in advance.
**Exam requirements**
Compiling a case study about a specific patient based on the following topics:
- Patient picked through screening
- A complex cardiovascular/metabolic disease
- Frequent serious communicable disease
- Patient with a musculoskeletal disease that has a strong negative impact on their life.

A case study displaying psycho-social problems

Parts of the presentation of the case:
1. Anamnesis
2. Current complaints
3. An examination plan
4. Examinations
5. Diagnosis
6. Therapy
7. Care
8. Processing and assessing the case based on professional literature
9. Bibliography

**Type and method of grading**
Assessment and grading of the course: with a 1 to 5 term mark:
- It’s based on the student’s activity through the training assessed by the tutor (40 percent) and the grade of the required case study (60 percent).
- Assessment of the case study is based on the following:
  - Grade 1: failing to hand in the essay on the deadline, the number of characters is under 3,000, the case study is not original, but plagiarism
  - Grade 2: absence of a required part of the case study, unsophisticated wording, serious professional failure
  - Grade 3: 2-3 professional or formal mistakes
  - Grade 4: one not too significant professional mistake
  - Grade 5: precise and accurate wording in the medical jargon, logical conclusions

**How to register for the exam:**
Registering for the exam in the ’Neptun’ system

**Opportunities to retake the exam:**
In accordance with the Studies and Exams Code.

**Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material):**

**Signature of the tutor:**

**Signature(s) of the head(s) of the Institute(s):**

**Date:**

**Credit Transfer Committee’s opinion:**

**Comment of the Dean’s Office:**
Dékáni Hivatal tölti ki, jóváhagyást követően.

Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!

Pl. terepgyakorlat, kórlemezés, felmérés készítése stb.

Pl. házi feladat, beszámoló, zárthelyi stb. témakör és időpontja, pótlásuk és javításuk lehetősége.

Elméleti vizsga esetén kérjük a tételek megadását, gyakorlati vizsga esetén a vizsgált témakör és módszert. Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeinek beszámítási módja.
<table>
<thead>
<tr>
<th>Requirements</th>
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</thead>
<tbody>
<tr>
<td>Semmelweis University, Faculty of Medicine</td>
</tr>
<tr>
<td>Department of Pharmacology and Pharmacotherapy</td>
</tr>
<tr>
<td>Name of the subject: Pharmacology and Pharmacotherapy I.</td>
</tr>
<tr>
<td>Credits: 5</td>
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<tr>
<td>Total number of hours: 70 lectures: 35 practices: 35</td>
</tr>
<tr>
<td>Type of the course (mandatory/elective): mandatory</td>
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<tr>
<td>Academic year: 2019/2020</td>
</tr>
<tr>
<td>Code of the course¹: AOKFRM034_1A</td>
</tr>
<tr>
<td>Course director (tutor): Dr. Ferdinandy, Péter</td>
</tr>
<tr>
<td>Contact details: Department of Pharmacology and Pharmacotherapy, 1089 Budapest, Nagyvárad tér 4. Tel: +36-1-2104416, e-mail: <a href="mailto:ferdinandy.peter@med.semmelweis-univ.hu">ferdinandy.peter@med.semmelweis-univ.hu</a></td>
</tr>
<tr>
<td>Position: Head of Department, full professor</td>
</tr>
<tr>
<td>Date of habilitation and reference number: June 2 2001., 26/2001 Hab.</td>
</tr>
<tr>
<td>Aim of the subject and its place in the curriculum:</td>
</tr>
<tr>
<td>Pharmacology is an essential subject in the medical education. It provides strong fundamentals for further clinical subjects since pharmacological therapies have a crucial role in treating diseases. Pharmacology draws upon previously acquired knowledge of biochemistry, physiology, pathophysiology as well as the basics of clinical subjects. The subject includes general pharmacology, detailed pharmacology, clinical pharmacology and toxicology as well as the basics of drug prescriptions. General pharmacology (pharmacodynamics, pharmacokinetics) is important for understanding the basic pharmacological terminology, how medicines act and what is their fate in the body. Detailed pharmacology describes the mechanisms of actions, main effects, adverse effects of the drugs and the most important drug interactions as well as the logics of dosage and prescribing. Clinical pharmacology and pharmacotherapy connect the drugs to diseases dealing with the indications, contraindications and warnings regarding their use. The diseases which have the greatest impact on public health are further detailed and their complex pharmacological treatment strategies are discussed. Medical students gain knowledge from simple case reports that show the logic of pharmacological treatment. Toxicology covers the most important poisons, intoxications, their symptoms and management thereby providing theoretical basics for emergency medicine of poisoning and drug overdoses. During pharmacological education the students will also learn the basics of prescription writing.</td>
</tr>
<tr>
<td>Location of the course (lecture hall, practice room, etc.): Nagyvárad tér Elméleti Tömb, 1089 Budapest, Nagyvárad tér 4.</td>
</tr>
</tbody>
</table>

¹: AOKFRM034_1A
Competencies gained upon the successful completion of the subject:
Students understand the pharmacological terminology, learn the mechanism of action, therapeutic effects, adverse effects, important interactions of drugs and the basics of dosing. They learn the mechanisms of action of the most important poisons, as well as the symptoms and management of intoxications/poisoning. That provides theoretical basics for emergency medicine of poisoning and drug overdoses. Knowing the basics of prescribing drugs is of an utmost importance.
Medical students gain knowledge from simple case reports that show the logic of pharmacological treatment. They learn the pharmacological treatment strategies of the most important diseases with the highest public health interests. This knowledge is based on the actual therapeutic guidelines.
They get insight in the development, applications and the whole lifecycle of drugs and medical devices. They understand the principles and importance of pharmacovigilance and how to report adverse events.

Prerequisite(s) for admission to the subject:
Medical Physiology II, Medical Biochemistry II, Pathophysiology II

Minimum and maximum number of students registering for the course: Since it is a mandatory subject all the students in the fourth year of medical education must register.
Student selection method in case of oversubscription:
N/A

How to register for the course:
Through the NEPTUN system
Detailed thematic of the course:

- **1st week**
  - Lecture: Introduction to Pharmacology. Development of Drugs (CP)
  - Practice: Pharmacodynamics I (drug receptors, receptor theories, drug-receptor interactions).
- **2nd week**
  - Lecture: Pharmacokinetics. Clinical pharmacokinetics (CP)
  - Practice: Pharmacodynamics II (quantal dose-response curves, therapeutic indices, tolerance, drug interactions). Basics of prescription writing
- **3rd week**
  - Lecture: Basics of the neurotransmission of the autonomic nervous system. Pharmacology of the cholinergic systems
  - Practice: Parasympathomimetics and parasympatholytics, centrally acting cholinergic drugs
- **4th week**
  - Lecture: Pharmacology of the adrenergic system
  - Practice: Sympathomimetics and sympatholytics
- **5th week**
  - Lecture: Pharmacology of the skeletal muscles. Pharmacology of the local anesthetics
  - Practice: Nitrates, Ca-channel blockers and other vasodilators. Pharmacology of RAAS.
- **6th week**
  - Lecture: Drugs used in coagulation disorders
  - Practice: Fibrinolytics, drugs against bleeding, drugs acting on blood cell production. Diuretics and antidiuretics
- **7th week**
  - Lecture: Treatment strategy of ischemic heart disease (CP). Treatment strategy of acute and chronic heart failure (CP)
  - Practice: Positive inotropic agents. Antihyperlipidemic drugs.
- **8th week**
  - Lecture: Treatment strategy of hypertension (CP)
  - Practice: Drugs acting on blood glucose control. Antidiabetics.
- **9th week**
  - Lecture: Treatment strategy of 2nd type diabetes mellitus (CP). Metabolic syndrome (CP)
  - Practice: Antiarrhythmic drugs. Drugs influencing the oxygen demand and oxygen supply of the heart. Drugs improving microcirculation.
- **10th week**
  - Lecture: Pharmacology of the respiratory system. Pharmacotherapy of bronchial asthma and COPD (CP)
  - Practice: Expectorants (secretomotorics, secretolytics, mucolytics), antitussive drugs. Autacoids, histamine, antihistamines.
- **11th week**
  - Lecture: Corticosteroids. Drugs affecting bone mineral homeostasis. Treatment strategy of osteoporosis (CP)
  - Practice: Pituitary hormones and hypothalamic hormones controlling their production. Hormonanalogs and hormone antagonists.
- **12th week**
- Lecture: Thyroid hormones and antithyroid drugs. Sexual hormones. Contraceptives (CCP)
- Practice: Androgens, antiandrogens, anabolic steroids, drugs influencing sexual activity.

- 13th week
  - Lecture: Special aspects of pediatric and geriatric pharmacology
  - Practice: Nutrients, traditional plant medicines, vitamins, anorectic drugs.

- 14th week
  - Lecture: Regulation of Drugs. Pharmacovigilance. Biological Drugs. Orphan Drugs (CP) Advanced Therapy Medicines
  - Practice: Pharmacovigilance (reporting adverse effects), drug registration, ATC code, generics, biosimilar drugs). Drug formulations.

CP: clinical pharmacology/pharmacotherapy material

**Potential overlap(s) with other subjects:**
Physiology, biochemistry, molecular biology, pathology, internal medicine, cardiology, pulmonology, clinical pharmacology, pediatrics

**Special training activities required**: N/A

**Policy regarding the attendance and making up absences:**
Maximum number of absences is 25 percent of the number of practices in the semester. In the case of absence the student can attend another class the same week.

**Means of assessing the students’ progress during the semester**: There are no mandatory midterm tests during the semester.

**Requirement for acknowledging the semester (signature)**:
The number of absences must not be more than 25 percent of the number of practices and lectures in the semester.

**Type of the examination**: oral semifinal exam
Exam requirements:
One question is given from two topic lists each. Acceptable knowledge must be proven.

Topic list "A"
1. Pharmacodynamics I (Molecular targets of drugs. Drug receptors. Receptor theory.)
5. Local anesthetics.
6. Glucocorticoids for oral and parenteral use.
9. Estrogens and antiestrogens.
11. Thyroid and antithyroid drugs. Hypothalamic and pituitary hormones.
12. Pancreatic hormones and parenterally applied antidiabetic drugs. Pharmacotherapy of IDDM.
14. Agents affecting bone mineral homeostasis (calcium, vitamin D, parathyroid hormone, calcitonin, etc.). Pharmacotherapy of osteoporosis.
15. Drugs used in coagulation disorders I: Antiplatelet agents.
16. Drugs used in coagulation disorders II: Anticoagulant drugs.
17. Drugs used in coagulation disorders III: Fibrinolytic drugs. Drugs used in bleeding disorders.
18. Agents used in anemias.
19. Special aspects of pediatric and geriatric pharmacology.

Topic list "B"
1. Cholinergic transmission and its presynaptic modification.
2. Adrenergic transmission and its presynaptic modification.
3. Cholinomimetics.
4. Muscarinic receptor blocking drugs.
5. Catecholamines.
6. Indirect sympathomimetics. Selective $\alpha_2$-agonists and drugs acting on the imidazoline receptors.
7. $\alpha$-receptor antagonists.
8. $\beta$-receptor antagonists.
10. Skeletal muscle relaxants acting on the neuromuscular junction.
11. Selective $\beta_2$-stimulants and other bronchodilators. Pharmacotherapy of bronchial asthma and COPD.
12. Antiinflammatory agents used in bronchial asthma. Antitussive agents and expectorants.
18. Drugs used for the treatment of hypertension II: Ca++-channel blockers and other vasodilators
19. Drugs used for the treatment of hypertension III: Drugs acting on the renin-angiotensin-aldosterone system
21. Agents used in dyslipidaemias.
22. Potassium excreting (wasting) diuretics
23. Potassium sparing diuretics, ADH antagonists, osmotic diuretics
24. Histamine and antihistamines.

**Type and method of grading**:  
According to the knowledge proven at the exam.

**How to register for the exam**:  
Registration must be done through the NEPTUN system for the days set by the department up to the limits.

**Opportunities to retake the exam**:  
According to the Study and Examination Policy of Semmelweis University

**Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material)**:  

Materials discussed during lectures and seminars: [http://semmelweis.hu/pharmacology](http://semmelweis.hu/pharmacology), Moodle ([https://itc.semmelweis.hu](https://itc.semmelweis.hu))

**Signature of the tutor:**

**Signature(s) of the head(s) of the Institute(s):**

**Date:**

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**Credit Transfer Committee’s opinion:**

**Comment of the Dean’s Office:**

**Signature of the Dean:**

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1 Dékáni Hivatal tölti ki, jóváhagyást követően.
2 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
3 Pl. terepgyakorlat, kórlapelemzés, felmérés készítése stb.
4 Pl. házi feladat, beszámoló, zárthelyi stb. témaköre és időpontja, pótlásuk és javításuk lehetősége.
5 Elméleti vizsga esetén kérjük a tétesor megadását, gyakorlati vizsga esetén a vizsgáztatás témakörét és módját.
6 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeink beszámítási módja.
REQUIREMENTS

Semmelweis University, Faculty of Medicine
Department of Pharmacology and Pharmacotherapy

Name of the subject: Pharmacology and Pharmacotherapy II.
Credits: 5
Total number of hours: 70 lectures: 35 practices: 35
Type of the course (mandatory/elective): mandatory

Academic year: 2019/2020

Code of the course¹: AOKFRM034_2A

Course director (tutor): Dr. Ferdinandy, Péter
Contact details: Department of Pharmacology and Pharmacotherapy, 1089 Budapest, Nagyvárad tér 4. Tel: +36-1-2104416, e-mail: ferdinandy.peter@med.semmelweis-univ.hu
Position: Head of Department, full professor
Date of habilitation and reference number: June 2 2001., 26/2001 Hab.

Aim of the subject and its place in the curriculum:
Pharmacology is an essential subject in the medical education. It provides strong fundamentals for further clinical subjects since pharmacological therapies have a crucial role in treating diseases. Pharmacology draws upon previously acquired knowledge of biochemistry, physiology, pathophysiology as well as the basics of clinical subjects. The subject includes general pharmacology, detailed pharmacology, clinical pharmacology and toxicology as well as the basics of drug prescriptions. General pharmacology (pharmacodynamics, pharmacokinetics) is important for understanding the basic pharmacological terminology, how medicines act and what is their fate in the body. Detailed pharmacology describes the mechanisms of actions, main effects, adverse effects of the drugs and the most important drug interactions as well as the logics of dosage and prescribing. Clinical pharmacology and pharmacotherapy connect the drugs to diseases dealing with the indications, contraindications and warnings regarding their use. The diseases which have the greatest impact on public health are further detailed and their complex pharmacological treatment strategies are discussed. Medical students gain knowledge from simple case reports that show the logic of pharmacological treatment. Toxicology covers the most important poisons, intoxications, their symptoms and management thereby providing theoretical basics for emergency medicine of poisoning and drug overdoses. During pharmacological education the students will also learn the basics of prescription writing.

Location of the course (lecture hall, practice room, etc.):
Nagyvárad térí Elméleti Tömb, 1089 Budapest, Nagyvárad tér 4.
Competencies gained upon the successful completion of the subject:
Students understand the pharmacological terminology, learn the mechanism of action, therapeutic effects, adverse effects, important interactions of drugs and the basics of dosing. They learn the mechanisms of action of the most important poisons, as well as the symptoms and management of intoxications/poisoning. That provides theoretical basics for emergency medicine of poisoning and drug overdoses. Knowing the basics of prescribing drugs is of an utmost importance.
Medical students gain knowledge from simple case reports that show the logic of pharmacological treatment. They learn the pharmacological treatment strategies of the most important diseases with the highest public health interests. This knowledge is based on the actual therapeutic guidelines.
They get insight in the development, applications and the whole lifecycle of drugs and medical devices. They understand the principles and importance of pharmacovigilance and how to report adverse events.

Prerequisite(s) for admission to the subject:
Pharmacology and pharmacotherapy I, Medical Microbiology II, Internal Medicine – Propedeutics

Minimum and maximum number of students registering for the course: Since it is a mandatory subject all the students in the fourth year of medical education must register.
Student selection method in case of oversubscription:
N/A

How to register for the course:
Through the NEPTUN system
Detailed thematic of the course:

- **1st week**
  - Lecture: Basic pharmacology of analgesics
  - Practice: Opiods. Adjuvant analgesics
- **2nd week**
  - Lecture: Immunopharmacology
  - Practice: NSAIDs. Drugs for gout
- **3rd week**
  - Lecture: Treatment strategy of autoimmune diseases (CP). Treatment strategy of pain
  - Practice: Antidepressants and anti manic drugs – case reports (CP)
- **4th week**
  - Lecture: Pharmacology of the central noradrenergic and serotonergic systems. Pharmacotherapy of mood disorders (CP)
  - Practice: General anesthetics
- **5th week**
  - Lecture: Pharmacology of the central GABA-ergic system. Pharmacotherapy of anxiety and sleep disorders (CP)
  - Practice: Antipsychotics – case reports (CP)
- **6th week**
  - Lecture: Pharmacology of the central dopaminergic systems. Pharmacotherapy of neurodegenerative diseases (CP)
  - Practice: Antiepileptics
- **7th week**
  - Lecture: Agents used for treatment of peptic ulcer
- **8th week**
  - Lecture: Antiviral drugs and pharmacotherapy of viral infections (CP)
  - Practice: Cell Wall Synthesis Inhibitors & Membrane-Active Antibiotics
- **9th week**
  - Practice: Antibiotics Inhibiting Bacterial Protein Synthesis.
- **10th week**
  - Lecture: Pharmacotherapy of bacterial infections (CP)
  - Practice: Antibiotics Inhibiting Bacterial Nucleic Acid Synthesis. Miscellaneous Other Antibiotics.
- **11th week**
  - Lecture: Drugs affecting smooth muscles. Drugs of Abuse (CP)
  - Practice: Cytotox antitumor agents
- **12th week**
  - Lecture: Basics of toxicology
  - Practice: Cytostatic and other anticancer drugs.
- **13th week**
  - Lecture: Treatment strategy of cancer (CP)
  - Practice: Toxicology
- **14th week**
  - Lecture: Pharmacological aspects of emergency care (CP)
  - Practice: Contrast agents. Disinfectants
<table>
<thead>
<tr>
<th>CP: clinical pharmacology/pharmacotherapy material</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential overlap(s) with other subjects:</strong></td>
</tr>
<tr>
<td>Physiology, biochemistry, molecular biology, pathology, internal medicine, cardiology, pulmonology, neurology, psychiatry, pediatrics, microbiology, infectology, oncology, immunology</td>
</tr>
<tr>
<td><strong>Special training activities required</strong>:</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td><strong>Policy regarding the attendance and making up absences:</strong></td>
</tr>
<tr>
<td>Maximum number of absences is 25 percent of the number of practices in the semester. In the case of absence the student can attend another class the same week.</td>
</tr>
<tr>
<td><strong>Means of assessing the students’ progress during the semester</strong>:</td>
</tr>
<tr>
<td>There are no mandatory midterm tests during the semester.</td>
</tr>
<tr>
<td><strong>Requirement for acknowledging the semester (signature):</strong></td>
</tr>
<tr>
<td>The number of absences must not be more than 25 percent of the number of practices and lectures in the semester.</td>
</tr>
<tr>
<td><strong>Type of the examination</strong>:</td>
</tr>
<tr>
<td>Final exam has three parts. 1. Preceding exam from toxicology. 2. Written test from clinical pharmacology. 3. Oral exam.</td>
</tr>
</tbody>
</table>
Exam requirements:
Acceptable knowledge of toxicology and the basics of prescription writing. On the day of the final exam acceptable written clinical pharmacology/pharmacotherapy test exam. During the oral exam one question is given from three topic lists each. Acceptable knowledge must be proven.

Topic list "A"
1. Pharmacodynamics I (Molecular targets of drugs. Drug receptors. Receptor theory.)
5. Local anesthetics
6. Glucocorticoids for oral and parenteral use
7. Mineralocorticoids. Topically applied glucocorticoids
8. Androgens, anabolic steroids, antiandrogens. Agents affecting the sexual activity
9. Estrogens and antiestrogens
10. Progestins and antiprogestins
11. Contraceptives
12. Thyroid and antithyroid drugs. Hypothalamic and pituitary hormones
13. Pancreatic hormones and parenterally applied antidiabetic drugs. Pharmacotherapy of IDDM.
15. Agents affecting bone mineral homeostasis (calcium, vitamin D, parathyroid hormone, calcitonin, etc.). Pharmacotherapy of osteoporosis.
16. Drugs used in coagulation disorders I: Antiplatelet agents
17. Drugs used in coagulation disorders II: Anticoagulant drugs
18. Drugs used in coagulation disorders III: Fibrinolytic drugs. Drugs used in bleeding disorders
19. Agents used in anemias
20. Special aspects of pediatric and geriatric pharmacology
22. Pharmacovigilance (reporting adverse effects), drug registration, ATC code, generics, biosimilar drugs). Drug formulations. Inhalational anesthetics
23. Intravenous anesthetics. Perioperative medication
24. Benzodiazepines
26. 1st generation (“typical”) antipsychotic agents
27. 2nd generation (“atypical”) antipsychotic agents
28. Tricyclic, tetracyclic and unicyclic antidepressants. MAO-inhibitors
29. Selective serotonin and/or norepinephrine reuptake inhibitors.
31. Antiepileptics used in partial seizures and generalized tonic-clonic seizures except for the “broad spectrum” agents.
32. Antiepileptics used in absence seizures. “Broad spectrum” antiepileptic drugs. Drugs used for treatment of status epilepticus
33. Drugs used for treatment of neurodegenerative disorders. Nootropic drugs
34. Smooth muscle relaxants used for relief GI and UG spasms. Drugs influencing uterus functions.
36. Drugs used in constipation (laxatives) and diarrhea. Drugs promoting digestion. Pharmacology of liver and biliary tract

Topic list "B"
1. Cholinergic transmission and its presynaptic modification.
2. Adrenergic transmission and its presynaptic modification
3. Cholinomimetics
4. Muscarinic receptor blocking drugs
5. Catecholamines
6. Indirect sympathomimetics. Selective α2-agonists and drugs acting on the imidazoline receptors
7. α-receptor antagonists
8. β-receptor antagonists
9. Centrally acting skeletal muscle relaxants (spasmolytics). Dantrolene. Botulinum toxin
10. Skeletal muscle relaxants acting on the neuromuscular junction
11. Selective β2-stimulants and other bronchodilators. Pharmacotherapy of bronchial asthma and COPD.
12. Antiinflammatory agents used in bronchial asthma. Antitussive agents and expectorants
13. Drugs used for the treatment of peripheral vascular diseases. Therapy of migraine
16. Antiarrhythmic agents
18. Drugs used for the treatment of hypertension II: Ca++-channel blockers and other vasodilators
19. Drugs used for the treatment of hypertension III: Drugs acting on the renin-angiotensin-aldosterone system
21. Agents used in dyslipidaemias.
22. Potassium excreting (wasting) diuretics
23. Potassium sparing diuretics, ADH antagonists, osmotic diuretics
24. Histamine and antihistamines.
25. Natural opiates, opioid receptors
26. Semisynthetic and synthetic opiates
27. General properties of NSAIDs. Acetylsalicylic acid.
30. Immunopharmacology II. (Inhibitors of cytokine gene expression, 5-ASA derivatives)
31. Immunopharmacology III. (Antibodies and fusion proteins)
32. Cancer chemotherapy I (antimetabolites)
33. Cancer chemotherapy II (alkylating agents)
34. Cancer chemotherapy III (Topoisomerase inhibitors. Inhibitors of mitotic spindle)
35. Cancer chemotherapy IV. (Hormonal agents)
36. Cancer chemotherapy V. (Small molecule signal transduction inhibitors)
37. Cancer chemotherapy VI. (Large molecule signal transduction inhibitors.

Topic list "C"
1. General considerations of antimicrobial therapy. Disinfectants and antiseptics
2. Antimycobacterial drugs
3. Antiprotozoal and antihelminthic drugs.
4. Antifungal agents
5. Agents to treat Herpes simplex (HSV), varicella-zoster (VZV) virus, cytomegalovirus (CMV) and respiratory syncytial virus (RSV) infection. Anti-influenza agents
6. Antiretroviral agents.
7. Agents against hepatitis viruses
8. Penicillins
9. Cephalosporins
11. Chloramphenicol. Polymyxins. Antifolate drugs
12. Tetracyclines and glycyclcyclines
13. Aminoglycosides
14. Quinolones and fluoroquinolones
15. Macrolides. Ketolides

Type and method of grading:
Written test: according to the scores. Final exam consists of three parts. The grade will be decided after the oral part of the exam (three questions), taken into consideration the results of the preceding two parts, toxicology exam and written clinical pharmacology/pharmacotherapy exam.

How to register for the exam:
Registration must be done through the NEPTUN system for the days set by the department up to the limits.

Opportunities to retake the exam:
According to the Study and Examination Policy of Semmelweis University

Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material):

Materials discussed during lectures and seminars: http://semmelweis.hu/pharmacology, Moodle (https://itc.semmelweis.hu)

Signature of the tutor:

Signature(s) of the head(s) of the Institute(s):

Date:

Credit Transfer Committee’s opinion:
Comment of the Dean’s Office:

Signature of the Dean:

1 Dékáni Hivatal tölti ki, jóváhagyást követően.
2 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékelten nem csatolható!
3 Pl. terepgyakorlat, körlapelemzés, felmérés készítése stb.
4 Pl. házi feladat, beszámoló, zártvégi stb. témaköre és időpontja, pótlásuk és javításuk lehetősége.
5 Elméleti vizsga esetén kérjük a tétemsor megadását, gyakorlati vizsga esetén a vizsgált témakörét és módját.
6 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérések eredményeink beszámítási módja.
## REQUIREMENTS

<table>
<thead>
<tr>
<th>Semmelweis University, Faculty of Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name(s) of the Institute(s) teaching the subject:</strong> Department of Laboratory Medicine</td>
</tr>
</tbody>
</table>

| **Name of the subject:** Laboratory Medicine 1. |
| **Credits:** 3 |
| **Total number of hours:** 35 |
| **Type of the course (mandatory/elective):** mandatory |

| **Academic year:** 2019/2020 |
| **Code of the course:** AOKLI709_1A |

| **Course director (tutor):** Prof. Dr. Barna Vásárhelyi |
| **Contact details:** Laboratóriumi Medicina Intézet, 06-1-361-459/62098 |

| **Position:** Head of the Institute |
| **Date of habilitation and reference number:** 22/03/2010. 29/2010 |

**Aim of the subject and its place in the curriculum:**
The Laboratory Medicine curriculum is based on knowledge acquired during studies of Pathophysiology obtained during the third year. The major goal is to present some approach and diagnostic algorithms that are required for efficient request and evaluation of lab test results. As part of course the students obtain information regarding:

- the procedure that generates laboratory test results (from requesting a test to laboratory reports)
- laboratory tests needed to establish a diagnosis
- the major aspects that the medical doctors should take into account when they evaluate a laboratory report
- novel techniques used in general laboratory (assessing their drawbacks and benefits).

Beyond the basic knowledge integrated into the internal medicine training, diagnostic problems by the means of real life examples are discussed during the practices.

| **Location of the course (lecture hall, practice room, etc.):** |
| Semmelweis University NET Building and/or Semmelweis University Central Clinical Laboratory |

**Competencies gained upon the successful completion of the subject:**
Our goal is to provide students with the ability to use cost-effective diagnostic algorithms and evaluate their results with the theoretical and practical knowledge of advanced diagnostic tools.

**Prerequisite(s) for admission to the subject:**
Microbiology 2., Pathophysiology 2.

**Minimum and maximum number of students registering for the course:** 1/5 of the students registered in Neptun

**Student selection method in case of oversubscription:** N/A

**How to register for the course:**
Through the Neptun
### Detailed thematic of the course:

#### Lectures
7 x 3 hours by blended learning method via e-learning (itc.semmelweis.hu)

1. Laboratory tests: Importance of the preanalytical preparation.
2. Analytical phase in the laboratory, major measurement techniques, their advantages and limitations.
4. Quick testing options; POCT for the general practitioner.
5. Bedside testing options in the hospital
6. The role of clinical microbiology in infection control, antimicrobial stewardship.
7. Unnecessary laboratory tests and their consequences

#### Practices
1. Visiting the Central Laboratory
2. “Sick or not?” screening tests
   - a. Screenings, screening tests, general screening
3. Laboratory evaluation of a patient with metabolic disorders
   - a. Laboratory evaluation of lipid metabolism.
   - b. Laboratory evaluation of carbohydrate metabolism.
   - c. Laboratory examination of liver dysfunction.
4. Laboratory evaluation of a patient with endocrine disease
   - a. Hypothalamus, pituitary gonads.
   - b. Thyroid gland, adrenal glands and cortex.
   - c. Investigation of calcium phosphate metabolic disorders and diseases of the bone.
5. Laboratory evaluation of a patient with GI-disease
   - a. Diagnosis of gastrointestinal disorders and infections.
   - b. Effect of microbiome on general health.
   - c. Side effect of antibiotic therapy.
6. Laboratory evaluation of a patient with kidney disease
   - a. Acute and chronic renal failure.
   - b. Urogenital infections, urinalysis.
7. Laboratory evaluation of a patient with chronic diseases
   - a. Fluid, ionic disorders, shock.
   - b. Acid-base imbalance.
   - c. Respiratory failure.

### Potential overlap(s) with other subjects:
Pathology, Pathophysiology, Internal medicine

### Special training activities required:
None

### Policy regarding the attendance and making up absences:
In accordance with study and examination rules.

### Means of assessing the students’ progress during the semester:
There will be no intermediate checks during the training period. However, the interactive nature of the exercises makes it possible to test students' knowledge and use of the information at their disposal. Students must successfully complete an online MCQ using the e-learning system, in order to prove they have properly mastered the material. Failing to do so, the subject will not be registered as successfully completed.

### Requirement for acknowledging the semester (signature):
Completing theoretical online tests and attendance of practices.
<table>
<thead>
<tr>
<th><strong>Type of the examination:</strong></th>
<th>Online MCQ test.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exam requirements</strong>&lt;sup&gt;5&lt;/sup&gt;:</td>
<td>Lecture material provided electronically by the e-learning system</td>
</tr>
<tr>
<td><strong>Type and method of grading</strong>&lt;sup&gt;6&lt;/sup&gt;:</td>
<td>MCQ test. (50 questions/test)</td>
</tr>
<tr>
<td>Grading:</td>
<td></td>
</tr>
<tr>
<td>46 - 50 points:</td>
<td>5 (outstanding)</td>
</tr>
<tr>
<td>41 - 45 points:</td>
<td>4 (good)</td>
</tr>
<tr>
<td>36 - 40 points:</td>
<td>3 (average)</td>
</tr>
<tr>
<td>31 to 35 points:</td>
<td>2 (fair)</td>
</tr>
<tr>
<td>30 points or less:</td>
<td>1 (fail)</td>
</tr>
<tr>
<td><strong>How to register for the exam:</strong></td>
<td>Through e-learning system</td>
</tr>
<tr>
<td><strong>Opportunities to retake the exam:</strong></td>
<td>In accordance with study and examination rules.</td>
</tr>
<tr>
<td><strong>Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material):</strong></td>
<td>Learning guide on the website</td>
</tr>
<tr>
<td>McPherson RA, Pincus MR: Henry's Clinical Diagnosis and Management by Laboratory Methods 22nd Edition</td>
<td></td>
</tr>
<tr>
<td><strong>Signature of the tutor:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Signature(s) of the head(s) of the Institute(s):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Date:</strong></td>
<td></td>
</tr>
</tbody>
</table>

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1. Dékáni Hivatal tölti ki, jóváhagyást követően.
2. Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
3. Pl. terepgyakorlat, kórlapelemzés, felmérés készítése stb.
4. Pl. házi feladat, beszámoló, zárlatbeli stb. témakörök és időpontja, pótlásuk és javításuk lehetősége.
5. Elméleti vizsga esetén kérjük a tételsor megadását, gyakorlati vizsga esetén a vizsgált témakörét és módját.
## REQUIREMENTS

<table>
<thead>
<tr>
<th>Name(s) of the Institute(s) teaching the subject:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name of the subject: Orthopaedics</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Credits: 3,5</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Total number of hours: 49 lectures: 1,5 practices: 2 seminars:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type of the course (mandatory/elective): mandatory</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Academic year:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Code of the course¹:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Course director (tutor): Gergely Holnapy</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Contact details: +36-204-720-877</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Position: assistant professor</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date of habilitation and reference number:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Aim of the subject and its place in the curriculum:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Location of the course (lecture hall, practice room, etc.):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Orthopaedic dept.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>2. floor</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Központi Betegellátó Épület</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Úllői út 78/B</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Budapest</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Competencies gained upon the successful completion of the subject:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Competencies in clinical examination. Distinguish acute and chronic disorders of musculoskeletal system, and select the possible treatment method. The conservative and operative treatment methods in orthopaedics, the advantage and disadvantage of these methods.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Prerequisite(s) for admission to the subject:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Macro- and microanatomy, physiology, pathology, biochemistry and propedeutics in internal medicine final exam.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Minimum and maximum number of students registering for the course:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Student selection method in case of oversubscription:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mandatory subject.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How to register for the course:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Online, through the Neptun system.</th>
</tr>
</thead>
</table>
Detailed thematic of the course:

**Lectures**


**Practices**

Potential overlap(s) with other subjects:
Traumatology: physical examination, Rheumatology: arthritis, Pediatrics: pediatric orthopaedics

Special training activities required:

Policy regarding the attendance and making up absences:
Participation on 75% of practices and lectures is mandatory.
Replace practices is possible during the block period, or at the end of the semester.

Means of assessing the students’ progress during the semester:
Students have to fill out - during block - the trial test on Semmelweis University’s e-learning system.

Requirement for acknowledging the semester (signature):
Participation on 75% of practices and lectures. Successful practical exam at the end of practices.

Type of the examination:
Test.

Exam requirements:
Successful practical exam at the end of practices. Filled trial test during block period. The material for examination is based on the lectures.

Type and method of grading:

How to register for the exam:
Online, throughout the Neptun system.

Opportunities to retake the exam:
According to official exam rules.

Literature, i.e. printed, electronic and online notes, textbooks, tutorials (URL for online material):
M. Szendroi: Orthopaedics

Signature of the tutor:

Signature(s) of the head(s) of the Institute(s):

Date:

Credit Transfer Committee’s opinion:

Comment of the Dean’s Office:

Signature of the Dean:

---

1 Dékáni Hivatal tölti ki, jóváhagyást követően.
2 Az elméleti és gyakorlati oktatást órákra (hetekre) lebontva, sorszámozva külön-külön kell megadni, az előadók és a gyakorlati oktatók nevének feltüntetésével. Mellékletben nem csatolható!
3 Pl. terepgyakorlat, kórlepelmezés, felmérés készítése stb.
4 Pl. házi feladat, beszámoló, zárhelyi stb. témaköre és időpontra, pótlásuk és javításuk lehetősége.
5 Elméleti vizsga esetén kérjük a tételsor megadását, gyakorlati vizsga esetén a vizsgázatás témakörét és módját.
6 Az elméleti és gyakorlati vizsga beszámításának módja. Az évközi számonkérésnek eredményeink beszámítási módja.
**STUDY REQUIREMENTS**

<table>
<thead>
<tr>
<th>Subject name:</th>
<th>Orvosi képalkotás</th>
</tr>
</thead>
<tbody>
<tr>
<td>In english¹</td>
<td>Medical imaging</td>
</tr>
<tr>
<td>In german¹</td>
<td>Medizinische Bildgebung</td>
</tr>
<tr>
<td>Credits:</td>
<td>3</td>
</tr>
<tr>
<td>Total hours:</td>
<td>44</td>
</tr>
<tr>
<td>Lectures:</td>
<td>4+14 (the latter in the context of other subjects)</td>
</tr>
<tr>
<td>Practice:</td>
<td>24</td>
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<tr>
<td>Seminars:</td>
<td>0</td>
</tr>
<tr>
<td>Examination:</td>
<td>2</td>
</tr>
<tr>
<td>Subject type:</td>
<td>obligatory, optional, selectable</td>
</tr>
<tr>
<td>School year:</td>
<td>2020/21</td>
</tr>
<tr>
<td>Subject code²:</td>
<td></td>
</tr>
<tr>
<td>Course leader:</td>
<td>Prof. Dr. Bérczi Viktor</td>
</tr>
<tr>
<td>Workplace, phone number:</td>
<td>Department of Radiology, Semmelweis University, 459-1500/61626/61628</td>
</tr>
<tr>
<td>Title:</td>
<td>professor, chairman</td>
</tr>
<tr>
<td>Date and place of habilitation:</td>
<td>2008, Semmelweis University</td>
</tr>
</tbody>
</table>

**The aim of the subject and its place in the medical curriculum:**
The aim of the course is to introduce the role of medical imaging and interventional radiology in clinical practice, diagnostic and treatment of diseases. In particular, the presentation of the methodology of medical imaging, interventional procedures and nuclear medicine, the delineation of the advantages and disadvantages of each modalities and the presentation of radiological screening will be of particular importance. Discuss the preliminary preparation and scheduling of diagnostic imaging for the patients. Learn the professional terminology of imaging procedures. Introducing the most common imaging differential diagnoses and their typical radiological appearance. Demonstration of the role of imaging examination in the patient care process and the importance of consultatons between clinician and radiologist.

**Place where the subject is taught (address of lecture hall, seminar room etc.):**
Department of Radiology, Semmelweis University, 78/A Úllői street, 1082, Budapest
Heart and Vascular Center, Semmelweis University, 68 Városmajor street, 1122, Budapest
Department of Transplantation and Surgery, Semmelweis University, 23-26 Baross street, 1082, Budapest

**The competencies that will be gained by successful completion of the course:**
The knowledge of the basics of imaging diagnostics is now an essential part of almost every clinical profession. In grade 4 the most important goal of medical imaging education is to equip the students with competence to choose the imaging procedures needed to treat patients and to properly interpret imaging diagnoses. This requires knowledge of the methodology, special nomenclature of imaging procedures, their role in the patient care process and the most important radiological diagnoses.

**The prerequisite(s) for admission to the course:**
Anatomy, Microscopic anatomy and development, Embryology, Medical biophysics, Medical communication, Medical terminology, Physiology, Pathology, Translational medicine and pathophysiology.

**Prerequisted student number for starting the course (minimum, maximum), the way students are selected:** based on the registration in the Neptun system for the full grade.
### How to apply for the course:
Neptun system

### Detailed topic of the subject³:
See appendix.

### Other subjects relevant to the cross-border issues of the course (both obligatory and optional subjects!). The possible overlaps between themes:
- Medical biophysics – physical background of medical imaging procedures, radiation protection, radiation physics
- Internal medicine – imaging diagnostics of internal medical conditions
- Surgery – imaging diagnostics of surgical conditions and image guided interventions
- Pediatrics – imaging diagnostics of paedriatrical conditions
- Pulmonology – imaging diagnostics of pulmonological conditions
- Cardiology, angiology – cardiovascular imaging diagnostics, image guided interventional procedures
- Urology - imaging diagnostics of urological conditions and image guided interventions
- Traumatology – emergency imaging
- Orthepody – imaging diagnostics of musculosceletal disorders
- Obstetrics and Gynecology- imaging diagnostics of gynecological diseases, imaging examination in pregnancy
- Neurology - imaging diagnostics in neurological conditions, stroke management
- Psychiatry – imaging diagnostics in psychiatrical contidions
- Anesthesiology and intensive care – emergency imaging
- Oncology – imaging diagnostics in oncological conditions
- Otorhinolaryngology (ENT) – imaging diagnostics in ENT conditions

### Any special study work required for succesful completion of the subject⁴:
None

### Requirement for attendig classes and opportunities to make up for absences:
According to the study and examination rules 75% of the sessions are compulsory. Replacement is possible in another block per week.

### The way the acquired knowledge is checked during the term⁵:
We increase student interactivity with case discussions and related Kahoot assignments during the practises. The students can actively participate in examinations during skill practices. Acquiring the curriculum is supported by multilingual, freely accessible e-textbook and case reports with explanatory text available on the Clinic’s website.

### Requirements for signing the semester:
At least 75% attendance at the sessions. Presence is managed in the Neptun system.

### Type of the examination:
Written exam based on pre-defined topics on the last Friday afternoon.

### Exam requirements⁶:
1. Contrast materials in radiology (physical background, types, application)
2. Contrast agent reactions, allergies and their prevention
3. Dangers of ionizing radiation in radiology and radiation therapy
4. Radiation protection in radiology and the ALARA principle
5. Tools for digital imaging
6. Technical basics of conventional x-ray examinations (x-ray image, fluoroscopy)
   Advantages, disadvantages, clinical significance. Tasks of the referring physician, preexam preparation of the patient, execution of the examinations
   Tasks of the referring physician, preexam preparation of the patient, execution of the
8. Technical basics of computer tomography (CT). Advantages, disadvantages, clinical significance. Tasks of the referring physician, preexam preparation of the patient, execution of the examinations
10. Technical basics of complex breast diagnostics. Advantages, disadvantages, clinical significance. Tasks of the referring physician, preexam preparation of the patient, execution of the examinations
13. Technical basics of isotope diagnostics and hybrid imaging (PET/CT, PET/MRI). Advantages, disadvantages, clinical significance. Tasks of the referring physician, preexam preparation of the patient, execution of the examinations
15. Radiological diagnostics of thoracic emergencies.
16. Radiological diagnostics of abdominal and pelvic emergencies.

<table>
<thead>
<tr>
<th>Rating method and how it is formed:</th>
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<tbody>
<tr>
<td>At least 50% of the theoretical test exam consisting single and multiple choice questions and cases must be answered correctly for a successful exam. Grading: 0-49%: 1, 50-62%: 2, 63-74%: 3, 75-85%: 4, 86-100%: 5.</td>
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<tr>
<th>How to apply for the exam:</th>
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<tr>
<td>Through the Neptun system.</td>
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<th>Ways to retake the exam:</th>
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<td>Students can repeat the test at the time scheduled for the following study week.</td>
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<tr>
<th>Printed, electronic and online notes, textbooks, manuals, and literature (html for online material) that can be used to learn the curriculum:</th>
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<tbody>
<tr>
<td>Medical Imaging - online e-textbook <a href="http://oftankonyv.reak.bme.hu/tiki-index.php">http://oftankonyv.reak.bme.hu/tiki-index.php</a> (mostly chapter 1-7.)</td>
</tr>
<tr>
<td>Exam images and lecture extracts (available on the Department’s website)</td>
</tr>
</tbody>
</table>

| Signature of the habilitated instructor announcing the subject (course leader): |

| Signature of the director of the host institute: |

| Date of submission: |

| OKB opinion: |

| Note from the Dean’s Office: |
Only required if the subject is announced in that language.

Completed by the Dean’s Office after approval.

Instruction of theoretical and practical education shall be given in hours (weeks), numbered separately, with the names of the lectures and of the instructors. Can not be attached!

Eg. field practice, case analysis, survey, etc.

The subject and date, the possibility of replacement and retake of eg. homework, report, midterm.

In the case of a theoretical exam, please state the batch of items, in case of a practical exam, state the subject and manner of examination.

The way theoretical and practical exams are counted in. The way in which the results of the midterm test are counted in.