

Pathology and Histopathology

Curriculum

2020/2021

Semmelweis University

Faculty of Medicine

2nd Department of Pathology

Budapest, 2020

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| 1st SEMESTER-2020 | | |
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| | LECTURES | HISTOPATHOLOGY |
| Week 1 | <p>7/9 Introduction (Kiss)</p> <p>9/9 Cell injury (Kiss) Reversible cell injury (hydropic swelling, atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia, intracellular storage). Irreversible cell injury (necrosis, apoptosis, ischemic cell injury, external damaging agents, calcification, hyalinization, aging).</p> | <p>Practice 1- Introduction</p> <ul style="list-style-type: none"> • Safety rules • Digital teaching system • Teleconsultation • E-school |
| Week 2 | <p>14/9 Hemodynamic disorders I. (Madaras) Basics of hemodynamics. Hemorrhage, active and passive hyperemia. Disorders of fluid homeostasis and electrolytes. Edema.</p> <p>16/9 Hemodynamic disorders II. (Madaras) Thrombosis, embolism. Infarction. Shock.</p> | <p>Practice 2- Cell injury, adaptation, storage disorders</p> <ul style="list-style-type: none"> • Coagulative necrosis, • Liquefactive necrosis • Apoptosis • Hypertrophy • Hyperplasia • Fatty degeneration • Amyloidosis • <i>Infiltratio adiposa myocardii</i> • <i>Bronchus - squamous metaplasia</i> |
| Week 3 | <p>21/9 Inflammation I. (Tímár) Definition. Symptoms. Vascular permeability. Inflammatory mediators and their origin. Cellular recruitment. Acute inflammation. Systemic manifestations of inflammation. Inflammation of avascular tissues. Wound healing, regeneration and repair. Classification of cells and tissues according to their regenerative capability. Extracellular matrix.</p> <p>23/9 Inflammation II. (Lotz) Chronic inflammation. Fibrosis, scar formation. Granulomatous inflammation: (tuberculosis, syphilis. etc.)</p> | <p>Practice 3- Hemodynamic disorders I.</p> <ul style="list-style-type: none"> • Acute congestion - pulmonary edema • Chronic pulmonary congestion • Hemosiderin in alveolar macrophages (“heart failure cells”) • Chronic congestion in the liver (“nutmeg liver”) • Shock, DIC |
| Week 4 | <p>28/09 Cardiovascular pathology I. (Glasz) Structure of vessels. Atherosclerosis. Aneurysms. Hypertensive vascular disease. Inflammatory disorders of blood vessels. Microvascular disease. Diseases of the veins and lymphatic vessels. Vascular tumors.</p> <p>30/09 Cardiovascular pathology II. (Glasz) Endocarditis, myocarditis, pericarditis. Rheumatic heart disease. Ischemic heart disease.</p> | <p>Practice 4- Hemodynamic disorders II.</p> <ul style="list-style-type: none"> • Thrombus • Fat embolism • Anemic infarction – kidney • Hemorrhagic infarction - lung |
| Week 5 | <p>05/10 Cardiovascular pathology III. (Glasz) Congenital heart diseases. Cardiomyopathies. Heart failure. Systemic diseases involving the heart. Cardiac tumors.</p> <p>07/10 Neoplasia I. (Schaff) Neoplasia - definition. Characteristics of benign and malignant tumors. Histological classification of tumors. Grading.</p> | <p>Practice 5- Inflammation, cell repair</p> <ul style="list-style-type: none"> • Acute appendicitis • Fibrinous pericarditis • Granulation tissue • Foreign body granuloma • <i>Rheumatic myocarditis</i> |

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| <p>Week 6</p> | <p>12/10 Neoplasia II. (Schaff) Causes of neoplasia. Epidemiology. Chemical, physical and biological carcinogenesis. Prevention. Screening.</p> <p>14/10 Neoplasia III. (Tímár) Molecular mechanisms of tumor development: protooncogenes, oncogenes, tumor suppressor genes, growth factors.</p> | <p>Practice 6- Midterm I (cell injury, hemodynamics, inflammation) Cardiovascular diseases</p> <ul style="list-style-type: none"> • Arteriosclerosis • Atherosclerosis • Acute myocardial infarction • Myocardial infarction - healing • Endocarditis • <i>Viral myocarditis</i> • <i>Temporal arteritis</i> • <i>Kaposi-sarcoma</i> |
| <p>Week 7</p> | <p>19/10 Neoplasia IV. (Tímár) Tumor growth, tumor progression, metastasis. Familiar cancer</p> <p>21/10 Neoplasia V. (Kulka) Prognostic factors in tumor pathology. Staging and grading of tumors. TNM. Handling of surgical biopsy material</p> | <p>Practice 7- Neoplasia I</p> <ul style="list-style-type: none"> • Squamous metaplasia • Condyloma (LSIL) • CIN 3 (HSIL) • Invasive carcinoma |
| <p>Week 8</p> | <p>26/10 Childhood tumors (Halász)</p> <p>28/10 Genetic and developmental disorders. Gene pathology I. (Kiss) Single-gene abnormalities. Autosomal dominant and recessive inheritance, sex-linked disorders. Lysosomal storage disease.</p> | <p>Practice 8- Neoplasia II. (Benign and malignant tumors)</p> <ul style="list-style-type: none"> • Squamous papilloma • Squamous cell carcinoma • Adenoma • Adenocarcinoma • Lymph node metastasis • Liver metastasis |
| <p>Week 9</p> | <p>02/11 Autoimmune diseases (Glasz) Etiology. Monosystemic diseases (e.g. chr. atrophic gastritis, myasthenia gravis, Graves disease, Hashimoto thyroiditis, Addison disease., Insulin-dependent diabetes mellitus, multiple sclerosis) and Oligo- polysystemic diseases (e.g. SLE, Sjögren sy, RA, scleroderma, dermatomyositis)</p> <p>04/11 Clinical pathology I. (Székely E) Tumor Screening, Cytodiagnostics. Basic cytopathological morphology of benign and malignant lesions. Case presentations.</p> | <p>Practice 9- Neoplasia III. (Soft tissue and childhood tumors)</p> <ul style="list-style-type: none"> • Leiomyoma • Leiomyosarcoma • Osteosarcoma • Wilms tumor • Neuroblastoma • Mature teratoma • <i>Fascitis nodularis</i> • <i>Desmoid fibromatosis</i> • <i>Rhabdomyosarcoma</i> • <i>Liposarcoma</i> |
| <p>Week 10</p> | <p>09/11 Clinical pathology II. (Kiss) Diagnostic parameters, requirements, which guide the clinical protocols. Molecular diagnostics of tumors. Targeted therapy</p> <p>11/11 Immunopathology (Kiss) Constituents of the immune system. Hypersensitive reactions. Allergy. Transplantation. Immunodeficiency. AIDS.</p> | <p>Practice 10- Biopsy techniques, protein- and DNA-based diagnostics</p> <ul style="list-style-type: none"> • Cytology smear • Core needle biopsy • Biopsy by endoscopy • Frozen section • Special stains • Immunohistochemistry • FISH • <i>Polypus nasi</i> • <i>Asthma bronchiale</i> • <i>Acute rejectio</i> • <i>Lupus nephritis</i> • <i>Scleroderma</i> |

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| Week 11 | <p>16/11 Genetic and developmental disorders. Gene pathology II. (Kiss) Chromosomal abnormalities. Morphogenic disorders, malformations, multifactorial inheritance. Prenatal diagnosis. Familiar diseases and symptoms.</p> <p>18/11 Hematopathology I. (Székely E) Hemopoetic system. Normal function (bone marrow, lymph nodes, spleen). Morphology and immunologic evaluation. Disorders of platelets and coagulation. Anemias, polycythemia. Neutrophilia. Proliferative disorders of mast cells. Monocytosis. Sinus histiocytosis. Benign disorders of lymphoid cells.</p> | <p>Practice 11- Hematopathology I.</p> <ul style="list-style-type: none"> • Reactive lymphadenopathy • Hodgkin's lymphoma • Nodal non-Hodgkin's lymphoma • Extranodal non-Hodgkin's lymphoma • Multiple myeloma |
| Week 12 | <p>23/11 Hematopathology II. (Székely E) Acute myeloproliferative syndromes (acute leukaemias). Chronic myeloproliferative syndromes (CML, myelofibrosis, thrombocytopenia). Acute and chronic lymphocytic leukemias. Disorders of the spleen</p> <p>25/11 Hematopathology III. (Székely E) Lymphomas (Hodgkin, non-Hodgkin). Metastatic tumors in bone marrow and lymph nodes. Clinicopathological case demonstrations</p> | <p>Practice 12- Hematopathology II.</p> <ul style="list-style-type: none"> • Megaloblastos vércépzés • AML • CML • Myelofibrosis <p><i>CLL</i></p> |
| Week 13 | <p>30/11 Infectious diseases (Lotz) Viral diseases (tick-borne viruses, polio, smallpox, herpes, CMV, EBV, rubella, varicella, mumps, influenza), Rickettsiae, Spirochetes. Bacteria (tularaemia, pertussis, legionella, brucellosis, listeriosis, clostridial infections (tetanus, botulism), Streptococci) Actinomycosis. Mycobacteria (tbc, leprosy). Protozoa (malaria, toxoplasmosis, amebiasis)</p> <p>02/12 Environmental and nutritional pathology (Kerényi) Smoking, alcoholism, drugs. Iatrogenic injuries. Environmental chemical and physical factors. Obesity, protein malnutrition, vitamins</p> | <p>Practice 13- Practical exam (1 organ, 1 histology slides, 3 questions from the definition list)</p> |
| Week 14 | <p>07/12 Bones and joints (Arató G.) Structure of the bone and cartilage. Osteogenesis. Growth and maturation disorders of the skeleton. Aseptic bone necrosis. Reactive osteogenesis. Osteomyelitis and specific inflammatory diseases. Metabolic disorders. Tumors and tumor-like lesions of the bones and joints</p> <p>09/12 Clinicopathology</p> | <p>Practice 14- The pathology report, Interesting autopsy case presentation, Consultation</p> |

2nd Semester-2021

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| Week 1 | <p>01/02 Head and neck (Székely E) Neoplastic and non-neoplastic lesions of the lips, oral cavity, tongue, teeth, salivary glands, sinuses, pharynx, larynx, ear.</p> <p>03/02 Respiratory system I. (Székely E) Diseases of conducting airways and lung parenchyma. Diffuse alveolar damage. Chronic obstructive pulmonary disease (COPD). Restrictive lung diseases.</p> | <p>Practice 1- Pulmonary pathology I. - non-neoplastic diseases</p> <ul style="list-style-type: none"> • IRDS • Bronchopneumonia • Lobar pneumonia • Tuberculosis • Boeck sarcoidosis • <i>Cystic fibrosis</i> • <i>Pneumocystis pneumonia</i> |
| Week 2 | <p>08/02 Respiratory system II. (Tímár) Development of lung cancer. Neoplasia (primary cancer of the lung, metastasis, benign tumors). Etiology, genetic abnormalities. Diseases of the pleura.</p> <p>10/2 Student's research Conference (TDK)</p> | <p>Practice 2- Pulmonary pathology II- neoplastic</p> <ul style="list-style-type: none"> • Small cell carcinoma • Squamous cell carcinoma • Adenocarcinoma • Mesothelioma |
| Week 3 | <p>15/02 Gastrointestinal tract I. (Kiss) Esophagus (anatomy and developmental disorders, inflammation, trauma, tumors). Stomach- part I.</p> <p>17/02 Gastrointestinal tract II. (Madaras) Pathology of the stomach (part 2) and small bowel. Appendix.</p> | <p>Practice 3- Gastrointestinal pathology I.</p> <ul style="list-style-type: none"> • Peptic ulcer - stomach • Gastritis chronica (H. pylori) • Carcinoma sigillocellulare • GIST • <i>Pleomorphic adenoma – parotid gland</i> |
| Week 4 | <p>22/02 Gastrointestinal tract III. (Madaras) Colon (congenital disorders, infections, diverticular disease, inflammation, Crohn's disease, ulcerative colitis, vascular diseases, neoplasms, other disorders). Peritoneum.</p> <p>24/02 Pathology of the liver I. (Schaff) Anatomy and function of the liver.. Bilirubin-metabolism and jaundice. Hepatic failure. Hepatorenal syndrome. Viral hepatitis. Chronic hepatitis. Cirrhosis. Portal hypertension. Non-viral hepatitis.</p> | <p>Practice 4- Gastrointestinal pathology II.</p> <ul style="list-style-type: none"> • Celiac disease • Ulcerative colitis • Crohn's disease |
| Week 5 | <p>01/03 Pathology of the liver II. (Schaff) Alcoholic liver disease, toxic liver injury. Hemochromatosis. Vascular disorders.</p> <p>03/03 Pathology of the liver III. (Kiss) Neoplasms. Gallbladder and bile ducts (congenital anomalies, cholecystitis, cholelithiasis, cholangitis, neoplasms)</p> | <p>Practice 5- Liver pathology</p> <ul style="list-style-type: none"> • Alcoholic hepatitis • Viral hepatitis • Cirrhosis • Hepatocellular carcinoma • Chronic cholecystitis |

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| Week 6 | <p>08/03 Pathology of the exocrine pancreas (Székely E) Developmental abnormalities, inflammation, tumors of the exocrine pancreas.</p> <p>10/03 Endocrinology I. (Székely E) Pathology of the endocrine pancreas: Diabetes mellitus. The hypothalamus-hypophysis system. Pathology of the pituitary gland. The thyroid gland: hypo- and hyperfunction, inflammations, tumors.</p> | <p>Practice 6- Midterm II (lung, GI, liver, pancreas)</p> <p>Pathology of the pancreas</p> <ul style="list-style-type: none"> • Acute pancreatitis • Chronic pancreatitis • Adenocarcinoma of the pancreas • Neuroendocrine tumor |
| Week 7 | <p>15/03 National Holiday</p> <p>17/03 Endocrinology II. (Kovács A) Pathology of the parathyroid gland. Hypo- and hyperfunction and other diseases of the adrenal cortex. Tumors of the adrenal gland. Pineal gland. Ectopic hormone production</p> | <p>Practice 7- Endocrine pathology</p> <ul style="list-style-type: none"> • Goiter • Autoimmune thyroiditis (Hashimoto) • Thyroid gland-follicular adenoma • Thyroid gland-papillary carcinoma • <i>Phaeochromocytoma</i> |
| Week 8 | <p>22/03 Renal pathology I. (Kardos) Anatomy. Clinical syndromes. Glomerular diseases. Tubulointerstitial diseases. Renal disease and systemic disorders. Kidney transplantation</p> <p>24/03 Renal pathology II. (Kardos) Hydronephrosis. Kidney stones. Pyelonephritis. Congenital abnormalities. Tumors of the kidney.</p> | <p>Practice 8- Renal- and uropathology</p> <ul style="list-style-type: none"> • Kidney biopsy – diabetic nephropathy • End-stage kidney disease • Renal cell carcinoma • Transitional cell carcinoma |
| Week 9 | <p>29/03 Uropathology I. (Székely E) Congenital abnormalities of the urinary tract. Urinary bladder (malformations, inflammation, tumors). Urethra.</p> <p>31/03 Uropathology II. (Székely E) Diseases of the epididymis, testes, prostate, penis and scrotum</p> | <p>Practice 9- Uropathology- prostate, testis</p> <ul style="list-style-type: none"> • Prostatic hyperplasia • Prostatic adenocarcinoma • Testis- seminoma • Testis -embryonal carcinoma |
| | <p>05/04 Easter Holiday</p> <p>07/05 Spring break</p> | |
| Week 10 | <p>12/04 Uropathology II. (Székely E) Diseases of the epididymis, testes, prostate, penis and scrotum.</p> <p>14/04 Gynecologic pathology I. (Schaff) Pathology of the vulva and vagina. Non-neoplastic diseases of the cervix. Precancerous lesions of the cervix. HPV. Screening. Conisation. Cervic carcinoma. Bethesda system.</p> | <p>Practice 10- Midterm III. (endocrine, kidney, urology and gynecology)</p> <p>Gynecologic pathology I.</p> <ul style="list-style-type: none"> • Ectopic pregnancy • Endometriosis • Endometrial hyperplasia (simple) • Endometrial carcinoma • Follicular cyst- ovary • Mucinous cystadenoma-ovary • Serous cystadenoma-ovary • Serous papillary (cystadeno-) carcinoma-ovary • <i>Choriocarcinoma</i> |

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| Week 11 | <p>19/04 Gynecologic pathology II. (Madaras) Pathology of the uterus. Uterine bleeding disorders. Endometrial hyperplasia, endometriosis. Tumors of the endometrium, myometrium and serosa.</p> <p>21/04 Gynecologic pathology III. (Kulka) Pathology of the fallopian tube and the ovaries. Pregnancy-related pathology of the uterus.</p> | <p>Practice 11- Breast pathology</p> <ul style="list-style-type: none"> • Fibrocystic disease • Fibroepithelial tumors • Ductal carcinoma in situ (DCIS) • Invasive carcinoma (NST, lobular) |
| Week 12 | <p>26/04 Neonatology (Kiss) Premature birth and its complications. Intrauterine infections and their sequelae. Twin pregnancy. Diseases of the perinatal period. Sudden infant death</p> <p>28/04 Breast pathology I. (Kulka) Symptoms and diagnosis of breast diseases. Malformations. Benign symptomatic lesions (inflammations, fibrocystic disease, epithelial dysplasia and its significance, benign tumors)</p> | <p>Practice 12 - CNS histopathology:</p> <ul style="list-style-type: none"> • Purulent meningitis • Meningeoma • Glioma • Brain metastasis • <i>Parkinson-kór</i> <p>COMPETITION- 1st round</p> |
| Week 13 | <p>03/05 Breast pathology II. (Kulka) Malignant tumors - epidemiology, risk factors. Histologic classification of breast cancer. Prognostic factors in breast cancer. Non-epithelial malignancies of the breast. Screening: non-palpable breast lesions. The male breast</p> <p>05/05. Central nervous system I. (Reiniger) Trauma, vascular and circulatory disorders. CSF dynamics. Encephalomyelitis, meningitis. Congenital malformations. Demyelinating diseases. Neurodegenerative diseases. Pathology of the eye and ear. Metabolic diseases.</p> | <p>Practice 13- Skin pathology</p> <ul style="list-style-type: none"> • Capillary haemangioma - skin • Basal cell carcinoma • Melanocytic nevus • Malignant melanoma <p>COMPETITION- 2nd round</p> |
| Week 14 | <p>10/05 Central nervous system II. (Reiniger) Neoplasms (neuroectodermal, embryonic, ectopic tissue, metastasis). Peripheral nervous system (neuropathies, inflammations, trauma, tumors).</p> <p>12/05 Skin pathology (Kuroli) Basics of skin pathology. Primary lesions. Dermatitis. Infectious conditions of the skin. Skin manifestations of systemic diseases. Tumors of the surface epithelium and skin appendages. Pigmented nevi and malignant melanoma</p> | <p>Practice 14 – Consultation</p> |

List of textbooks

Kumar, Abbas, Aster **Robbins and Cotran: Robbins Basic Pathology (Elsevier, 10th Edition, 2017), ISBN: 978-0-323-35317-5**

Szende B., Suba Zs Introduction to Histopathology (Medicina, 1999)

WEBPAGE

General informations and downloads: <http://semmelweis.hu/patologia2/en/>

Online available case center (digital slides): <http://casecenter-korb2.sote.hu/casecenter/>

User name and password for Java based version: student_jav

User name and password for Panoramic Viewer based usege: student_pv

The visit of the internet based Case Center and Practice Test on tuition and exam dates is allowed after 4 p.m. only !

Mr. Rúben Kis and Mr. Endre Kontsek shall be approached with technical problems regarding server availability:

e-mail for Mr. Rúben Kis: kis.ruben@semmelweis-univ.hu

for Mr. Endre Kontsek: kontsek.endre@med.semmelweis-univ.hu

Panoramic Viewer free download: <http://www.3dhistech.com/>

4D pathology and auxilliary materials: <http://www.4dpathology.hu>

General information

Lectures

The topic of the lectures include both general and systemic pathology. Each lecture lasts 1 hour 10 minutes and is illustrated with macroscopic and microscopic photographs, radiologic images, illustrating the presented material. Occasionally interesting autopsy cases will be demonstrated during the lectures.

Attending the lectures is compulsory, since the semifinal and final exams are partly based on them. The 2nd Department of Pathology may record the absences and those students who skip more than 15 % of the lectures may not be registered for examination.

Practices

There are 14 two + two hours practices in both semesters, which are divided into autopsy and histopathology. Not more than 2 autopsy practices and not more than 2 histopathology practices can be missed in each semester. Catch up is possible only for autopsy hall practices, students can join other groups and their presence should be registered and signed by the tutor of the autopsy hall practice attended. In case the absences exceed the allowed limit the student will not be accepted for examination.

The histopathology practices provide basic histopathology skills. The topic of the histopathology practices matches that of the lectures. Brief theoretical background for the presented slides will be discussed in the frame of the practice. The pathological lesions will be presented in form of digital slides and will be demonstrated by the tutor with the help of a computerized multidiscussion/teleconsultation system. The digitalized slides will be individually studied and analyzed by the students as well. The digital slides are also available for the students through the internet every day from 4 p.m. till 8 a.m. the next day.

During autopsy practices the students will learn the basic skills of autopsy and how to recognize what's pathological and will gain skills to demonstrate and describe these lesions. The emphasis is on the clinicopathologic aspects of the discussed cases. If there is no autopsy available, organ demonstration will take place on plastinated organs. Alternatively, visit of the laboratories (Laboratory of Histopathology, Laboratory of Immunohistochemistry and Laboratory of Molecular Pathology) of the Department will be on the program.

The medical and patient information provided during autopsies, lectures and demonstrations is confidential. The requirement to maintain professional secrecy and preserve confidentiality also applies for medical students.

It is strictly forbidden to make any kind of record (photography, video, sound-record) of the material provided during the tuition and demonstrations in the facilities and building of the Department, especially during lectures and practices (including autopsy and histology practices). The material presented during the tuition is the intellectual property of the Department and their presentation is directly controlled by the Department. Therefore, it is not intended for the public and must not be published or arbitrarily recorded, alternatively taken away without the permission of the Department. Violation of the rules mentioned above implies disciplinary action. Exception can be made only based on the previous and written permission provided by the Head of the Department. The Department reserves the rights to completely control the communication of the information about the Department.

Midterm exams: There are one and two midterm exams in the first and second semester, respectively. Similarly to the written part of semifinal and final exams, midterms are performed in the e-school system. In addition, on week 12 of the first semester practical exam is held.

The participation of the midterm exams is compulsory. If a student can not attend one of the midterms the tutor should assess the basic knowledge of the student (see list of definitions on our webpage).

Pathology competition

Pathology competition has two rounds: the first, during the 12th and the second, during the 13th week of the 2nd semester. Macroscopic photographs will be projected in the first round and diagnoses should be given. The students with the best results (up to 8-10 people, depending on the number of participants) will enter the second round. The 2nd round has two parts: theoretical and histopathology parts. In the former, participants should recognize and describe autopsy macrophotos (virtual autopsy). During the histopathology part, participants should recognize and describe a neoplastic and a non-neoplastic slide.

Students use pseudonyms in both rounds. Those students who enter the second round are exempt from test writing, those who recognize both of the histopathology slides in the second round are exempt from histopathology, and those who provide exact autopsy description exempt autopsy in the final exam.

Consultation

Upon request there is a possibility for a consultation with the tutor. The students are welcome to autopsy practices of other groups for retake or extra occasion as long as it does not disturb the ongoing practice. **There is no consultation during the exam period.**

EXAMINATIONS

SEMIFINAL:

1. Prerequisites:

Absences: not more than 2 autopsy practices and not more than 2 histology practices (histology practice and autopsy hall practice counts separately) can be missed in each semester. Attending the lectures is compulsory. If one does not fulfill the above mentioned prerequisites the 2nd Department of Pathology has the right for not acknowledging the semester.

Midterm exams: Participation of the midterm exams during each semester is compulsory.

2. **Practical exam** will be held during the week 12 practice. One should be able to recognize the organ (complex), orientate it properly, precisely describe the pathological lesions and establish a macroscopical diagnosis. In addition, examinee should be able to recognize and describe one histology slide, and answer three questions from the definition list (see our webpage). All the three question will be graded on a scale from 0 to 3, and sum (max. 9) will be added to the later written test's result.

3. **The semifinal exam** is a **written test !!**.

The material for the examinations is based on the book, the lectures and practices as well. The questions are prepared based on the official pathological textbook, but the factual data of the lectures are also constituents of the written test.

The test consists of **60 questions** in the e-school system. The students have 60 minutes for writing the test. The test is given in one session, there will be no break during the examination. Your sitting order is determined by the actual supervisor. The written test will be held in the **Histopathology practice room** using the teleconsultation computerized system. Every student to be examined on a certain exam day will receive the same set of questions, however, in different order within one question and regarding the numbering of the questions as well. The actual set of questions will be randomly selected from a pool by the computer. Upon submission of the test for evaluation, the computer will evaluate it. The result is immediately available and will be recorded. **Since there is no possibility of human error in the correction the result of the written test is not subject of personal consultation.**

The test questions include simple choice (one correct answer out of 5), multiple choice (2 answers are correct), "true-false" analysis and definitions should be given. Every correct answer of a multiple choice question will be awarded with one point, false statements of the multiple choice questions will result in one point deduction in order to avoid randomly crossing every possible answer of the multiple choice questions. Altogether, the deductions can not conclude a negative score, the worst score for one question is 0. Before submitting the test for evaluation the answers might be changed. Copying the questions are not permitted. The results are posted at the same day, generally early afternoon.

Evaluation: The passing level of the written test is 60%, below 60% the exam is immediately failed. If the level of 60% is achieved, the points received on the practical exam will be added to points received on the written test.

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| 60-69,99%: 2 |
| 70-79,99%: 3 |
| 80-89,99%: 4 |
| 90-100%: 5 |

Suspension: If you have any problem during the test, ask the supervisor. In case of communicating, unacceptable behaviour, cheating (usage of mobile tools, books, notes, etc.) your exam is immediately suspended and the exam will not be evaluated and counts as a failed exam. Written report of the incident will be prepared and signed by the teachers.

4. The exam for EM begins at 8.30 a.m. sharp at the **2nd Department of Pathology**, meeting at the **Histology practice room**. The students to be examined will be identified by picture ID cards by the supervisor before starting the exam. Therefore, students should present a picture ID, otherwise they are not allowed to take examination!

5. Exam dates: You will be notified about the dates offered by the Department before the exam period and they will be finalized at the Staff/Student meeting. Then these fixed days will figure in NEPTUN.

Important! Taking examinations before the exam period is not permitted! (University Policy). In exceptional cases (such as near-delivery, etc.), you must have a written permission from the Dean's Office.

6. Registration: The internet based sign up system (NEPTUN) regarding pathology has been established for 3rd year students as well. The sign up procedure is controlled and regulated by the software and the institute can not interfere with the system. The officially signed up students will be scheduled for examination.

7. Rescheduling the exam date: The list of examinees is completed 2 days before the examination date (deadline: 9.00. a.m.), the NEPTUN system automatically closes the sign up list by expiration of the deadline. Example: if the exam is on Thursday the data sheet for Thursday will be taken in and finalized on Tuesday at 9 a.m.. You may remove your name prior to this period. After that changes are not permitted. If you do not show up on the given exam date, you should justify it within 3 days at the head of the Institute or at the tutor responsible for the English program. Otherwise, "not appeared" note is written in your index, and the exam is not allowed without having a retake ticket! The skipped exam is deducted from the number of possible retake exams.

8. Retake exam: In case of failure or for those who are unsatisfied with the result of the first exam a retake exam should be taken to improve the mark. For that a retake ticket is required from the secretariate. If one retakes an exam to improve the previous mark it is not granted that mark of the retake exam can not be the same or worst than the previous mark.

The retake exam - the first retake exam as well - may be oral by request !!

At least 4 days should be passed between the day of the failed exam and the day of the retake exam (the days of the examinations are not included). One must also register on the NEPTUN system and indicate that this is the first, second, etc. retake exam. Without retake ticket and NEPTUN registration one is not allowed to take an examination.

Any further details regarding the exam and exam dates will be discussed on a STUDENT / STAFF meeting held in the last week of November. The date of the meeting is to be announced on the lecture.

FINAL EXAM

Form of the **FINAL** examination

The final exam consists of two practical and two theoretical parts. The practical parts are **histopathology** in the histology practice room and **organ demonstration** in the autopsy hall. The theoretical parts are: **written test (60 questions – 60 minutes)** and **oral exam about theoretical topics** – concerning not only the organ or organ complex to be demonstrated, but the complete material discussed in the official pathology books as well as the material presented in the lectures. **The written test is compulsory part of the exam! The passing limit is 60 %.** The test is given in one session, there will be no break during the examination. Your sitting order is determined by the actual supervisor.

Written test: The test questions include simple choice (one right answer out of 5), and multiple choice (2 correct answers are correct), "true-false" analysis. Every correct answers of multiple choice questions will be awarded with one point, false statements of the multiple choice questions will result in one point deduction on order to avoid randomly crossing every possible answers of the multiple choice questions. Every answer should be marked in the computer. Before submitting answers for evaluation the answers might be changed.

Oral exam: 3 theoretical questions of the oral examination are from a list of theoretical questions (one from group A, B and C). The list of these theoretical questions is on the website of the department.

The material for the examinations is based on the book, the lectures and practices as well !!

The examination will take place at the 2nd Department of Pathology starting with the written test in the Histology Practice Room.

The final exam starts at 8.30 a.m. sharp!!!

MEETING POINT: In the Histology Practice Room at the 2nd Dept. of Pathology!!!

The students to be examined will be identified by picture ID cards by the supervisor before starting the exam. Therefore, students should present a picture ID, otherwise they are not allowed to take examination!

Evaluation: The passing level is 60 %. Each correct answer is worth of 1 point.

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| 0-59,99%: | 1 |
| 60-69,99%: | 2 |
| 70-79,99%: | 3 |
| 80-89,99%: | 4 |
| 90-100%: | 5 |

After test writing, examinees are required to take the **histology** part of the final. Two slides from the pool are given to the student and the examinee should describe the organ (if there is one present on the side) and the histological findings. Finally, a correct diagnosis should be given. The Histology part can not be examined by the tutor of the student.

After the test and histology, **organ demonstration** follows. During this part of the exam dissected organs or organ complexes are to be described. The student should be able to orientate the organ (or organ complex) properly, to describe it fully and evaluate the pathological alterations and establish diagnoses.

Finally, the **3 theoretical questions** are to be discussed.

The final mark will be decided by the exam board of the institute based on the marks received on the practical and theoretical parts of the final exam.

It should be kept in mind that the final mark is not merely the mathematical average of the given grades of different parts of the exam! Additional factors, for example your midterm results, your general performance during the academic year (evaluated by your tutor), the competition results, etc. are also taken into consideration. Serious mistakes or "clear spots" in your knowledge may significantly affect the final mark or even result in a failed exam.

Retake exam: In case of failure or for those who are unsatisfied with the result of the first exam a retake exam should be taken to improve the mark. If the student retakes the exam to improve the previous mark, the mark of the retake exam may be the same or worst than the previous mark.

At least 4 days should be passed between the day of the failed exam and the day of the retake exam (the days of the examinations are not included). The student must also register on the NEPTUN system and indicate that this is the first, second, etc. retake exam. Without retake ticket and NEPTUN registration the student is not allowed to take an examination.

By retake examination in case of failure the written test or/and the histology exam should not be repeated in case it has reached at least grade 3 by the previous examination.

In case of a retake exam that serves as improving the grade, the complete examination should be repeated, except if the written test/histology part was grade 5.

Failure on any part of the exam excludes a result of 5!

Announcement of the results is at the same day. Signed grade books can be obtained in the office of the Head of Department.

Suspension: If you have any problem during the test, ask the supervisor. In case of communicating, unacceptable behaviour, cheating (usage of mobile phone, books, notes, etc.) your exam is immediately suspended and the exam will not be evaluated and counts as failed exam. Written report of the incident will be prepared and signed by the teachers.

Schedule**Lectures**

| | <u>1st semester</u> | <u>2nd .semester</u> |
|-----------|--------------------------------|---------------------------------|
| Monday | 11:50 – 13:00 | 10:50 – 12:00 * |
| Wednesday | 8:00 – 9.10 | 8:00 – 9.10 * |

Practices

| | <u>1st semester</u> | <u>2nd semester</u> |
|-----------------|--------------------------------|--------------------------------|
| Group 1-5, 7, 9 | Wednesday 9:20 – 12:40 | 9:20 – 12:40 * |
| Group 6, 8 | Tuesday 13:15 – 14:45 | 11:10 – 12:40 * |
| | Thursday 11:10 – 12:40 | |

* preliminary data

Tutors

| | |
|---------|--|
| Group 1 | Dr. András KISS / Dr. András BUDAI |
| Group 2 | Dr. István KENESSEY |
| Group 3 | Dr. Zsófia KRAMER / Dr. Eszter SZÉKÁCS |
| Group 4 | Dr. Lilla MADARAS / Dr. Tekla KOVÁCS |
| Group 5 | Dr. Attila KOVÁCS |
| Group 6 | Dr. Gábor LOTZ / Dr. Márton SÁGHI |
| Group 7 | Dr. Tibor VÁRKONYI / Dr. Bianka PENCZ |
| Group 8 | Dr. József TÍMÁR / Dr. Deján DOBI |
| Group 9 | Dr. András KISS / Dr. István KENESSEY |

Responsible tutor: Dr. István KENESSEY (steveken12@yahoo.com)

Schedule for the academic year of 2019/2020

1st semester: September 09 – December 13, 2019
Official holidays: October 23 (Wednesday) – National Day
November 1 (Friday) – All Saints Day

Examination period: December 14, 2019 – January 31, 2020.

2nd semester: February 3 - May 15, 2020

Official holidays: February 12-13 – Semmelweis Student Research Group Conference
April 06-10 – Spring break
April 13 (Monday) – Easter Monday
April 23 (Thursday) – Dean's Day
May 1 (Friday) – International Worker's Day

Examination period: May 18 - July 03, 2020

August examination period: August 18-26, 2020

Budapest, 05 September 2019.

Dr. András Kiss