

ED II. Microscopic Anatomy and Embryology II.
(new curriculum)

ANNOUNCEMENTS CONCERNING THE CV FINAL EXAMINATIONS

Final examinations are generally held on days specified in NEPTUNE.
The exams start in the Histology Laboratories with a written test at 12.00 then continue with the oral part.

REGISTRATION ISSUES

Only students whose semester is accepted may sit for the final examination.
The topics of the examination cover the subject matter of the actual semester.

Registration has to be done in NEPTUNE according to the Study and Examination Policy. Registration closes 24 hours prior to the beginning of the examination (see in NEPTUN).

Absences – no-show at the semifinal examination reduces the remaining examination possibilities and Students will have to pay a missed examination fee via neptun. In case of a health problem, students will have to present a **doctor's note within 3 working days** to be evaluated by the Head of Department. If accepted, the number of the student's examination possibilities will not be reduced.

On the day of the examination

Please leave your bags in a locker and gather in front of the Histology lab 10 minutes before starting time (*as seen in Neptun*).

Please make sure you have the following items on you:

- ID card/student card with a photograph (you may not start the examination without it)
- SeKA login details* (memorize or write them down on a small piece of paper)
- *Students who cannot login /forgot their password will be considered as „absent” (see above) and have to sit for the examination on a different day
- In case of a retake exam – proof of payment (except for the 1st retake)
- **DRESS CODE – formal (according to weather)**
- Phones and smart watches have to be stored elsewhere during examinations
- Neither pens nor papers may be with you during the written part
- You cannot take notes or talk to your peers during the examination
- For safety reasons you may keep your valuables (money, cards, IDs, etc) on you, however „large” items, such as phones (switched off), tablets (switched off) and pencil cases will be collected upon entering the examination room.
- No chewing gum, no food, no drinks are allowed while on the premises

PARTS OF THE SEMIFINAL EXAMINATION

WRITTEN PART – Histology laboratory (Students may not leave the room during the test)

The test is composed of 50 simple / multiple choice questions including 8 Embryology questions

Writing time: 50 minutes

Following the completion of the test Students may **briefly** view their results, however, neither questions may be asked, nor notes may be taken during this time. Students may not leave the room before the inspection time expires.

Passing rate: 50% (below 50% =fail, 50% =satisfactory, 65% =average, 75% =good, 85% =excellent)

- Students not reaching 50% (25.00 points) in the written part **cannot continue** (i.e. fail) the examination and should leave.
- Students failing the examination in a subsequent practical/oral part may be exempted from the written test during the retake examination **ONLY if they gained a good (4), or excellent (5),** result from the written test. These students should present themselves at the **Histology laboratory** at the **beginning of the practical examination** on the day of the retake examination.

ORAL / PRACTICAL PART

This part is also held in the Histology Laboratory. The oral examination consists of

- 1 digitized tissue slides (description)
- 1 theoretical question from Neuroanatomy

During the oral exam it is possible that further questions, other than the identification of the presented specimens, may arise, e.g. discussing the theoretical or developmental relevances. Students may be asked to produce schematic drawings as part of the examination (e.g. reflexes, cross sections of the brain stem or schematic drawings of histological images).

MARKING SYSTEM

The examination finishes in the Dissection Room, where Students are given a mark calculated from all exam marks.

- If one part of an examination results in fail (1), the entire examination is terminated with a fail (1).
- Students may request in writing to sit for an oral theory exam to replace the written part in case of a 2nd or 3rd retake examination. A written request will have to be sent by email to the Course Director 48 hours before the examination day.
- **Students failing the examination, may repeat the exam once „free”, every further attempt will be charged for.** The total number of examination seats is set (200% of the number of students in a given course), therefore the number of examination seats will not be increased.
- **Retake of a successful examination** - students unhappy with the result of the examination may apply in writing with the Course Director, to retry the examination. They will be registered by the Course Director in neptun.
Please note, that such a retake examination does not necessarily result in a better mark.
- **Technical problems** concerning registration or deregistration via the neptun system are beyond the scope of the Department, Students should seek help from the neptun group of the Secretariat.
- The Registrar of the English Secretariat is not entitled to register or deregister students with the only exception of using the 4th chance upon getting the Dean's permission.

Dr. Gábor Gerber
Associate Professor, Dean and Subject Director

Dr. Andrea D. Székely
Associate Professor, Course Director

TOPICS OF THE FINAL EXAMINATION

(topics of the two semesters)

General Histology

Concept of basic tissues

Definition and classification of epithelial tissue

Simple epithelia

Stratified epithelia

Glandular epithelia

Pigment epithelium, sensory neuroepithelium

Cells of connective tissue

Ground substance and fibres of connective tissue

Types of connective tissue

Blood and the corpuscular elements of blood

Histology of the bone marrow, maturation of erythrocytes and platelets

Differentiation of granulocytes, lymphocytes and monocytes

Histology of cartilage and bone tissue

Intramembranous ossification. Endochondral ossification. Growth and remodeling of bone

Smooth muscle and myoepithelial cells

Skeletal muscle tissue

Cardiac muscle tissue

Histology of arteries and arterioles

Histology of veins and capillaries

Histology of organs

Wall structure of hollow organs

General composition of parenchymal (solid/compact) organs

Histology of the lip and tongue

Histology of the respiratory tract. Larynx. Trachea. Lung

Histology of the esophagus and stomach

Histology of the small and large intestines. Fine structure of the intestinal villi, enteroendocrine system

Histology of the liver. Gall bladder, biliary ducts

Histology of the pancreas

Histology of kidney. Ureter. Urinary bladder

Histology of the male and female gonads and genital organs/ducts

Histology of the uterus (proliferative, secretory phases) menstrual cycle, vagina

Maxillofacial Histology and Embryology

Enamel

Amelogenesis

Dentin

Dentinogenesis

Structure of the dental papilla

Cementum (two types)

Parodontium

Gingiva – subdivisions and histology

Tooth development

Tooth eruption
Development of the mandible and maxilla
Development of the face. Formation of the nasal cavity and paranasal sinuses
Microscopic Anatomy and development of the primary and secondary palates
Microscopic Anatomy and development of the tongue
Microscopic Anatomy and development of salivary glands
Derivatives of pharyngeal pouches and grooves
Derivatives of pharyngeal arches

Lymphatic organs

Histological structure of lymph nodes
Spleen (fine structure and circulation)
Thymus
Tonsils, MALT

Development of the nervous system and organs of special senses

Development and primary differentiation of the neural tube
Development of brain vesicles
Development of the peripheral nervous system (neural crest, placodes)
Development of the organ of vision
Development of the organ of hearing&equilibrium

Histology of the nervous system

Histology of the neurons developing from the neural tube
Glial cells
Histology of the neurons and supporting cells developing from the neural crest
Fine structure of peripheral nerves
Receptors and effectors
Interneuronal synapses

Microscopy of the central nervous system

Fine structure (microscopy) of the spinal cord
Proprioceptive reflexes
Nociceptive reflexes
Autonomic reflexes
Fine structure of the medulla oblongata
Fine structure of the pons
Fine structure of the midbrain
Classification of cranial nerve nuclei
Tracts of the brain stem
Reticular formation, monoaminergic systems
Fine structure of the cerebellum
Cerebellar afferents and efferents
Fine structure of the thalamus
Hypothalamo-hypophyseal system
Fine structure of the basal ganglia
Fine structure of the cerebral cortex, cortical fields
Tracts of the protopathic sensibility (anterolateral system)
Tracts of the epicritic sensibility (posterior funiculus/medial lemniscus)
Corticospinal tract (pyramidal tract)
Extrapyramidal system
Limbic system (nuclei and tracts)

Endocrine organs

Microscopical anatomy of the pituitary gland; development of the posterior lobe
Microscopical anatomy and development of the anterior and intermediate lobes of the pituitary gland
Blood supply of the pituitary gland
Microscopical anatomy of the pineal gland
Microscopical anatomy and the development of the thyroid gland
Microscopical anatomy and the development of the parathyroid gland
Microscopical anatomy and the development of the suprarenal gland
Histology of the islands of Langerhans

Organs of special senses

Microscopical structure of the skin (scalp and palm)
Histology and development of skin appendages, mammary gland

Coats of the eyeball
Chambers of the eye, vitreous body
Lens, accommodation
Visual pathway, visual reflexes
External ocular muscles, eye movements
Accessory and protective apparatus of the eye (palpebrae, conjunctiva, fasciae, lacrimal apparatus)

External ear, tympanic membrane. Tympanic cavity, auditory tube. Hearing ossicles (joints, muscles)
Vestibulocochlear nerve.
Organ of Corti. Cochlea, cochlear duct
Auditory pathway.
Vestibular system
Bony and membranous labyrinth, vestibulum

Organ of olfaction, olfactory pathway, olfactory nerve
Organ of taste, central processing of taste (tracts)