2025/2026. ACADEMIC YEAR

PROGRAM OF STUDY (FOR STUDENTS OF 1ST YEAR)

Full Hungarian name of the subject: Anatómia

Program: Undivided program (pharmaceutical)

Schedule: full-time

Short name of the subject: Anatomy

English name of the subject: Anatomy

German name of the subject: Grundlagen der Anatomie

Type of registration: obligatory/obligatory elective/elective/criteria requirement

Neptun code of the subject: GYKANT272E1A

Responsible Department: Department of Anatomy, Histology and Embryology

Responsible tutor: Dr. Alán Alpár **Contact information:** - **phone:** 215 6920 / 53609 ext. - **email:** alpar.alan@semmelweis.hu	**Title, academic degree:** full professor, Ph.D.
Name of the persons responsible for the teaching of the subject: Dr. Katalin Kocsis Dr. Krisztina Herberth-Minkó Dr. Gergely Zachar Dr. Zsuzsanna Tóth	**Title, academic degree:** assistant professor, Ph.D. assistant professor, Ph.D. senior research fellow, Ph.D. senior research fellow, Ph.D.
Class per week: **2** lecture(s) **2** practice(s)	**Credit point(s):** **2**

Professional content, intent of acquirement and it's function in order to implement the goals of the program:

Course principles:

Principles:

- to teach the terminology of the human anatomy to the future pharmacists
- to discuss those special anatomical and physiological conditions which may influnce the therapeutical considerations;
- to discuss those anatomical conditions, wich are necessary for the understanding of the further medical subjects of the pharmacists' studies;
- to teach the terminology (Latin and English) of human body parts (at a gross and microscopical anatomical level) necessary for the understanding of the medical language during the communication between the pharmacists and the doctors.

Special attention is required concerning the anatomy of the central nervous system and the digestive tract, the absorption of medicines and their mechanism of action.

Short description of the subject:

The lectures include all topics of anatomy, histology and embryology. Locomotor system, internal organs, nervous system, general and detailed histology, general embryology and development of organs are the topics of the lectures.

Course data

Recommended term	Contact hours (lecture)	Contact hours (practice)	Contact hours (seminar)	Individual lectures	Total number of contact hours/semester	Normal course offer	Consultations
... 2. semester	28	28	-	-	56	Autumn semester* Spring semester Both semesters	--

						(Please underline)*	

Program of semester**

Topics of theoretical classes (pro week):

1st week:	1. Basic tissues I. 2. Basic tissues II., Skin
2nd week:	3. Introduction, Locomotor System 4. Skull, vertebral column, head, neck muscles
3rd week:	5. The Immune System, the Lymphoid Organs 6. Blood, hematopoiesis
4th week:	7. Heart, the Vascular System 8. The Respiratory System, the Mechanics of Breathing
5th week:	9. The Digestive System I, abdominal cavity 10. The Digestive System II, The Liver, the Pancreas
6th week:	11. The Kidneys and the Urinary tract I. 12. The Kidneys and the Urinary tract II.
7th week:	13. The Female Reproductive Organs, cycle I. 14. The Female Reproductive Organs, cycle II.
8th week:	15. The Male Reproductive Organs, Pelvis I. 16. The Male Reproductive Organs, Pelvis II.
9th week:	17. Nervous System introduction (synapses, neurotransmitters) Spinal cord, spinal nerves 18. Central Nervous System, meninges, blood supply, CSF, Encephalon, Spinal cord, Spinal nerves
10th week:	19. Motor system, Sensory system, Limbic system 20. Cranial nerves, The Autonomic Nervous System
11th week:	21. The Eyeball and Visual system 22. The Organ of Hearing and Equilibrium.
12th week:	23. Hypothalamus, the Endocrine Organs I 24. The Endocrine Organs II
13th week:	25. Germ cells, Fertilization, Development of the fetus, Placenta, 26. Teratology
14th week:	27. Development of the Digestive System and Reproductive organs 28. Malformations

Topics of practical classes (pro week):

1st week:	basic tissues, skin
2nd week:	introduction, upper and lower limbsm, skull, vertebral column, head, neck muscles
3rd week:	histology of the blood,vessels and the lymphoid organs
4th week:	respiratory tract, thoracic cavity, heart, large vessels
5th week:	respiratory tract histology, gastrointestinal tract histology
6th week:	gastrointestinal tract, abdominal cavity
7th week:	kidney and urinary tract histology,
8th week:	urogenital system, pelvis
9th week:	genital organs histology
10th week:	1st Midterm- locomotor system, internal organs (not obligatory); nervous system histology
11th week:	sensory organs histology
12th week:	nervous system: brain, spinal cord, cranial nerves, spinal nerves, main vessels and nerves on limbs, sensory organs
13th week:	endocrine organs, placenta
14th week:	2nd Midterm - nervous system, sensory organs, endocrine organs, general embryology (not obligatory), revision

Schedule of consultations:

-

Course requirements

Prerequisites:
Cell Biology
The Latin basics of pharmaceutical terminology

Conditions of attending the classes, amount of acceptable absents, way of presentation of leave, opportunity for makeup:
Attendance of a minimum of 75% of practices is necessary for the end-term signatures. There is no makeup opportunity.

The grading method; the conditions for getting the signature; the number, topic(s) and date(s) of the mid-term assessments, ~~the end-of-term assessments~~ (reports, term tests), and the process in which they contribute to the final grade; and the possibility of their retake or their upgrading retake (as provided in §§ 25-28 of the STUDY AND EXAMINATION REGULATIONS):

The grades are the following in the Moodle tests: 0-49,9%: unsatisfactory, fail (1); 50-62,49%: satisfactory, pass (2); 62,5-74,9%: average (3); 75-87,49%: good (4), 87,5-100%: excellent (5)

Attendance of a minimum of 75% of practices is necessary for the end-term signatures. There is no makeup opportunity.

Midterms:
10th week and 14th week Midterms are “non-compulsory assessment”, from the topics "locomotor system, internal organs" and "nervous system, sensory organs, endocrine organs, general embryology", respectively. Its form is identical with the one of the semifinal exam (electronic, Moodle test). Successful (at least 50%) midterm provides the student with the exemption of the corresponding part of the examination, and if accepted, it is counted into the result of the semifinal exam.
The Midterms are not obligatory, there is no make-up possibility.

Exam:
In the end of the semester written semi-final exam defines the exam grade. The exam is electronic, via the Moodle system, including multiple choice question types, and "drag and drop" question types (requiring identification). In the written (electronic Moodle) test, 50% of the maximum score available must be achieved for a successful (at least satisfactory grade) test result. The written test consists of two main parts: 75% of the questions are from topics belonging to "locomotor system, internal organs", 25% of the questions are from the topics of "nervous system, sensory organs, endocrine organs, general embryology". In the end of the test the students may review if their answers were correct.

"According to the SEMMELWEIS UNIVERSITY, ORGANIZATIONAL AND OPERATIONAL REGULATIONS; PART III STUDENT STANDARDS III.2 STUDY AND EXAMINATION REGULATIONS (in force from 4 February 2026)
Article 30 [Rules of Examinations]
(1a) A test examination may only be conducted in written form if the test questions and their corresponding answers have been made available in advance to all affected parties. If this condition is not met (i.e., the test question bank and the corresponding answers are not accessible), an oral examination component must follow the written test on the same day as the written test. The content of the oral component must be fully identical to that of the written component. In examinations of this type, a failing partial grade in the written test does not constitute a failed examination, as the student shall automatically proceed to the oral component. The final examination grade shall be the weighted arithmetic average of the two components, calculated with a maximum weight of 40% for the written test and 60% for the oral component. This provision does not apply to students who receive at least a “fair” grade (3) or higher on the written test. For these students, the examination is completed with the written component alone, and their final grade is based solely on the result of the written test."
Based on this: In case of an "unsatisfactory (failed, 1) and satisfactory (passed, 2)" test exam result, the student continues the exam with an oral exam, drawing from the topics listed below,

and the weighted arithmetic average of the grade of the oral exam part and the grade of the written test, after rounding, gives the exam grade.

Number, topics and dates of tests during the semester, opportunities of makeup and improvement of results*:**

Midterms:
10th week and 14th week Midterms are “non-compulsory assessment”, from the topics "locomotor system, internal organs" and "nervous system, sensory organs, endocrine organs, general embryology", respectively. Its form is identical with the one of the semifinal exam (electronic, Moodle test). Successful (at least 50%) midterm provides the student with the exemption of the corresponding part of the examination, and if accepted, it is counted into the result of the semifinal exam.
The use of artificial intelligence during the assessment is not permitted.

The Midterms are not obligatory, there is no make-up possibility.

Topics of the Midterms:

1st Midterm:
Basic Tissues
The Skin and Its Appendages
The Locomotor System (Musculoskeletal System)
The Heart and Blood Vessels
Blood, the Immune System, and Lymphoid Organs
The Respiratory System
The Digestive System
The Kidneys and Urinary Tract
The Reproductive Organs

2nd Midterm:
The Central and Peripheral Nervous Systems
The Autonomic Nervous System
Sense Organs
The Endocrine System
Reproduction, Development, and Birth

Requirements of signature (as provided for in STUDY AND EXAMINATION REGULATIONS § 29):
Attendance of a minimum of 75% of the practices is necessary for the end-term signature. There is no make-up possibility.

Number and type of projects students have to perform independently during the semester and their deadlines:

-

Type of the semester-end examination: signature*/practical grade*/ comprehensive examination*/final/end-term examination* *(*Please underline)*

Examination requirements:
Exam:
In the end of the semester written semi-final exam defines the exam grade. The exam is electronic, via the Moodle system, including multiple choice question types, and "drag and drop" question types (requiring identification). In the written (electronic Moodle) test, 50% of the maximum score available must be achieved for a successful (at least satisfactory grade) test result. The written test consists of two main parts: 75% of the questions are from topics belonging to "locomotor system, internal organs", 25% of the questions are from the topics of "nervous system, sensory organs, endocrine organs, general embryology". In the end of the test the students may review if their answers were correct.
The use of artificial intelligence during the assessment is not permitted.

In case of an "unsatisfactory (failed, 1) and satisfactory (passed, 2)" test exam result, the student continues the exam with an oral exam, drawing from the topics listed below, and the weighted arithmetic average of the grade of the oral exam part and the grade of the written test, after rounding, gives the exam grade.

Oral exam topics:

1. Epithelial Tissue
2. Connective and Supporting Tissues
3. Muscle Tissue
4. Nerve Tissue
5. The Skin and Its Appendages
6. Axes, Planes, and Orientation, The Bones, The Joints
7. Vertebral column, upper and lower limbs
8. The Heart (Cor)
9. The Arterial System, The Venous System

10. The Blood, Functions of the Blood, The Cells of the Blood
11. The Lymphoid Organs (Immune Organs)
12. Nasal Cavity and Paranasal Sinuses, Larynx
13. The Windpipe and Bronchial Tree, Lungs (Pulmones)
14. The Oral Cavity, The Throat (Pharynx)
15. The Gullet (Esophagus), The Stomach (Ventriculus, Gaster)
16. The Small Bowel (Intestinum Tenue, Enteron), The Large Bowel (Intestinum Crassum)
17. The Liver
18. The Pancreas, The Gallbladder (Vesica Biliaris) and Bile Duct

19. The Kidney (Ren, Nephros)
20. The Renal Corpuscles and the Glomerular Filter
21. Ureter, Urinary Bladder (Vesica Urinaria), Urethra
22. Testis (Orchis), Epididymis
23. Vas Deferens, Seminal Vesicles (Vesiculae Seminales), Prostate Gland
24. Penis
25. Ovaries, Fallopian Tube (Uterine Tube, Salpinx)
26. Uterus
27. Vagina, External Female Sex Organs (Vulva)

28. The Brain (Encephalon), Spinal Cord (Medulla Spinalis)
29. Spinal Nerves, Cranial Nerves
30. The Autonomic Nervous System
31. The Eyeball (Globe, Bulbus Oculi)
32. The Ear
33. Hypothalamic–Hypophyseal Axis, Pituitary Gland (Hypophysis)
34. Thyroid Gland, Adrenal Glands (Suprarenal Glands)
35. Germ Cells, Fertilization
36. Structure of the Placenta

Form of the semester-end examination: written*/oral*/combinated examination/**practical examination/the assessment of completing project work (according to STUDY AND EXAMINATION REGULATIONS 30.§)*** *(* Please underline)*

The possibility and conditions for offering grades:

Successful (at least 50%) midterm provides the student with the exemption of the corresponding part of the examination, and if accepted, it is counted into the result of the semifinal exam.

A list of the basic notes, textbooks, resources and literature that can be used to acquire the knowledge necessary to master the curriculum and to complete the assessments, ****with exact description about which of them is required to acquire which part of the syllabus (e.g. description based on topics)), as well as the main technical and other aids and study aids that can be used:

List of teaching material:

During preparation, the use of artificial intelligence is allowed at the student's own responsibility.

Faller, A, Schuenke, M.: The Human Body: An Introduction to Structure and Function (Flexibook) 2004., Thieme, Stuttgart.

The chapters of the textbook follow the topics of the subject. The knowledge material required for the exam is the textbook, and the materials of lectures and practices. The material for the lectures and practices is uploaded to the subject's Moodle course.

The chapters of the textbook:
3 Tissues
Epithelial Tissue
Connective and Supporting Tissues
Muscle Tissue
Nerve Tissue
4 The Locomotor System (Musculoskeletal System)
Axes, Planes, and Orientation
The Bones
The Joints
5 The Heart and Blood Vessels
The Heart (Cor)
The Vascular System—Structure and Function
Lymph Vessels
The Fetal Circulation
The Arterial System
The Venous System
6 Blood, the Immune System, and Lymphoid Organs
The Blood
Functions of the Blood
The Cells of the Blood
The Immune System
The Lymphoid Organs (Immune Organs)
7 The Endocrine System
Hypothalamic–Hypophyseal Axis
Pituitary Gland (Hypophysis)
Pineal Gland (Pineal Body, Epiphysis Cerebri)
Thyroid Gland
Adrenal Glands (Suprarenal Glands)
Islet Apparatus of the Pancreas
The Gonads
8 The Respiratory System
Organs of the Air Passages
Nasal Cavity and Paranasal Sinuses
Pharynx
Larynx
The Windpipe and Bronchial Tree
Lungs (Pulmones)
9 The Digestive System
The Digestive Organs
The Oral Cavity
The Throat (Pharynx)
The Gullet (Esophagus)
The Stomach (Ventriculus, Gaster)

The Small Bowel (Intestinum Tenue, Enteron)
The Large Bowel (Intestinum Crassum)
The Pancreas
The Liver
The Gallbladder (Vesica Biliaris) and Bile Duct
10 The Kidneys and Urinary Tract
The Kidney (Ren, Nephros)
Shape and Position
Renal Cortex and Renal Medulla
The Renal Vessels
The Renal Corpuscles and the Glomerular Filter
Urinary Tract
Renal Pelvis
Ureter
Urinary Bladder (Vesica Urinaria)
Urethra
11 The Reproductive Organs
Male Reproductive Organs
Testis (Orchis)
Epididymis
Vas Deferens
Seminal Vesicles (Vesiculae Seminales)
Prostate Gland
Cowper's Glands (Bulbourethral Glands)
External Male Sex Organs
Female Reproductive Organs
Ovaries
Fallopian Tube (Uterine Tube, Salpinx)
Uterus
Vagina
External Female Sex Organs (Vulva)
The Female Breast (Mamma) and Mammary Gland
12 Reproduction, Development, and Birth
Germ Cells
Fertilization
Transport through the Uterine Tube and Segmentation
Implantation and Development of the Placenta (Afterbirth)
Structure of the Placenta
Umbilical Cord (Funiculus Umbilicalis)
Development of the Embryo
Derivatives of the Germ Layers
13 The Central and Peripheral Nervous Systems
Classification of the Nervous System
Role of the Nervous System
Development of the Nervous System
Central Nervous System
Development and Organization
The Brain (Encephalon)
Spinal Cord (Medulla Spinalis)
Membranes of the Brain and Spinal Cord
Cerebrospinal Fluid (CSF) and the Ventricular System
Peripheral Nervous System
Peripheral Nerves
Ganglia
Spinal Nerves
Networks of Nerves (Plexus or Plexuses)
Cranial Nerves
14 The Autonomic Nervous System
Sympathetic Nervous System
Parasympathetic Nervous System
Cranial Parasympathetic System

Sacral Parasympathetic Outflow Nervous System of the Intestinal Wall 15 Sense Organs The Eye The Eyeball (Globe, Bulbus Oculi) The Optic System The Ear The Organ of Hearing The Organ of Equilibrium The Sense of Taste The Sense of Smell 16 The Skin and Its Appendages Skin (Cutis) and Subcutaneous Tissue (Tela Subcutanea) Layers of the Skin Sensory Organs of the Skin Skin Appendages Glands of the Skin Hair Nails
In the case of a subject lasting more than one semester, the position of the teaching/research department on the possibility of parallel enrolment and the conditions for admission**:** yes*/no*/on and individual assesment basis* *(* Please underline)*
The course description was prepared by: Dr. Katalin Kocsis

***** A tantárgy tematikáját oly módon kell meghatározni, hogy az lehetővé tegye más intézményben a kreditelismerési döntéshozatalt, tartalmazza a megszerzendő ismeretek, elsajátítandó alkalmazási (rész)készségek, (rész)kompetenciák és attitűdök leírását, reflektálva a szak képzési és kimeneti követelményeire.***