



MORPHOLOGY 2

FIRST YEAR OF STUDY

Academic year 2024/2025.

ANATOMY 2

Course title:

ANATOMY 2

Number of ECTS credits: 11.

There are 8 hours of active classes per week (5 theoretical classes and 3 practical classes).

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Professors and associates:

1.	Ivana Živanović-Maćužić	ivanaanatom@yahoo.com	Full professor
2.	Maja Vulović	maja@fmn.kg.ac.rs	Full professor
3.	Dejan Jeremić	dejananatom@yahoo.com	Associate professor
4.	Predrag Sazdanović	predrag.sazdanovic@gmail.com	Associate professor
5.	Miloš Stepović	stepovicmilos@yahoo.com	Teaching fellow with PhD
6.	Kristijan Jovanović	kralj100@yahoo.com	Teaching assistant
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Structure of the Course:

Module	Module	No. of weeks	No. of lectures (weekly)	No. of practical classess (weekly)	Professor in charge
1	Anatomy of head and neck	9	5	3	prof. dr Predrag Sazdanović
2	Anatomy of central nervous system	6	5	3	prof. dr Ivana Živanović-Maćužić
					$\Sigma 75+45=120$

EVALUATION:

By completing the pre-exam requirements and taking the final (oral) exam, students can achieve a maximum of 100 points. The final grade is determined based on the number of points earned, which are obtained as follows:

PRE-EXAM ACTIVITIES (ACTIVITY DURING THE SEMESTER): In this way, the student can earn up to 30 points, in following ways:

- **ATTENDANCE TO AND ACTIVITY DURING THE CLASSES:** In this way, the student can earn up to 15 points, 1 point per week
- **TEST BY MODULES:** Tests are taken during the semester, according to schedule (and if test is failed, remedial tests during examination periods). In this way, students can earn up to 15 points, as per the attached table (next page).

ORAL EXAM: The condition for a student to take the oral exam is to pass all pre-exam activities beforehand. In this way, a student can earn up to 70 points. The oral part of the exam involves the students' answering to 5-10 posed questions. A grade of 0 on any question is the conclusion of the exam. Postponed passing of the final oral exam (in the following exam periods) does not reduce the number of points used to define the final grade.

MODULE		MAXIMAL NUMBER OF POINTS			Σ
		Activity during the classes (per week)	Test by module	Oral exam	
1	Anatomy of head and neck	9	9		18
2	Anatomy of the central nervous system	6	6		12
				70	70
	Σ	15	15	70	100

The final grade is formed as follows:

In order to pass the course, the student must obtain a minimum of 51 points, that means:

1. to have more than 50% points for attendance to and activity during the classes for each module
2. to pass the test of each module, that means to have more than 50% correct answers.
3. to pass oral exam

THE NUMBER POINTS (pre-exam activity + oral exam)	GRADE
0 - 50	5
51 - 60	6
61– 70	7
71 - 80	8
81– 90	9
91 - 100	10

TESTS BY MODULES

MODULE 1

TEST
0-9 POINTS

EVALUATION OF THE FINAL TEST

The test has 45 questions.
Each question is worth 0.2 points.

MODULE 2

TEST
0-9 POINTS

EVALUATION OF THE FINAL TEST

The test has 30 questions.
Each question is worth 0.2 points.

LITERATURE:

MODULE	The title of textbook	Authors	Publisher	Library of Faculty
Anatomy of head and neck	Moore's Clinically Oriented Anatomy	Dalley AF, Agur AM	Philadelphia, PA: Lippincott Williams and Wilkins; 2022. 9th, International Edition.	Yes
	Human anatomy	Marieb EN, Wilhelm PB, Mallat JB	Pearson, USA 2016. 8th Edition.	
Anatomy of central nervous system	Clinical Neuroanatomy	Waxman SG	Lange 29 th edition 2020	
	Human anatomy	Marieb EN, Wilhelm PB, Mallat JB	Pearson, USA 2016. 8th Edition.	
	Atlas of human anatomy.	Netter FH.	Philadelphia: Elsevier; 2011. 5th edition.	Yes

All lectures are available on the website of the Faculty of Medicine: www.medf.kg.ac.rs

COURSE DESCRIPTION:

THE FIRST MODULE: ANATOMY OF HEAD AND NECK

WEEK – 1:

FRONTAL, PARIETAL, OCCIPITAL BONE (OS FRONTALE, OS PARIETALE, OS OCCIPITALE)

Teaching lectures (1 class)	Practical classes (1 class)
General osteology of the skull. Os frontale, parietale, occipitale	Skull bones: • Identifying the bones of the head skeleton • Identifying and describing the osteological characteristics of the frontal, parietal, occipital, ethmoidal, sphenoidal bone (parts, surfaces, borders, articular surfaces, processes)

ETHMOIDAL, SPHENOIDAL, TEMPORAL BONE (OS ETHMOIDALE, OS SPHENOIDALE, OS TEMPORALE)

Teaching lectures (2 classes)	Practical classes (1 class)
Os ethmoidale, sphenoidale, temporale	• Identifying and describing the osteological features of the temporale bone (parts, surfaces, borders, articular surfaces, processes)

CERVICAL VERTEBRAE. HEAD AND NECK JOINTS.

Teaching lectures (2 classes)	Practical classes (1 class)
Cervical spinal vertebrae. General head and neck syndesmology. Joints and connections of the skull with the vertebral column. Art. Atlantoaxialis.	• Identifying and describing the osteological characteristics of the cervical spinal vertebrae • Joints and connections of the skull with the vertebral column. Art. Atlantoaxialis. (articular surfaces, connections, movements)

WEEK – 2:

MAXILLA, MANDIBULA, OS PALATINUM

Teaching lectures (2 classes)	Practical classes (1 class)
Facial bones. Maxilla, mandible, os palatinum	• Identifying and describing the osteological characteristics maxilla, mandible, os palatinum (parts, surfaces, borders, articular surfaces, processes)

OS ZYGOMATICUM, OS NASALE, OS LACRIMALE, VOMER, CONCHA NASALIS INFERIOR, OS HYOIDUM

Teaching lectures (1 class)	Practical classes (1 class)
Facial bones. Os zygomaticum, os nasale, os lacrimale, vomer, concha nasalis inferior, os hyoideum	• Identifying and describing the osteological characteristics os zygomaticum, os nasale, os lacrimale, vomer, concha nasalis inferior, os hyoideum (parts, surfaces, borders, articular surfaces, processes)

ART. TEMPOROMANDIBULARIS. CRANIOFACIAL CAVITIES

Teaching lectures (2 classes)	Practical classes (1 class)
Temporomandibular joint (art. temporomandibularis) Craniofacial cavities	• Describing the basic anatomical characteristics of the art. temporomandibularis (articular surfaces, connections, movements) • Describing the basic anatomical features of the craniofacial cavities (orbita, nasal cavity, infratemporal fossa, pterygopaltin fossa)

WEEK – 3:**SUPERFICIAL (MUSCLES OF FACE AND SCULP) AND DEEP MUSCLES OF THE HEAD
(MUSCLES OF MASTICATION)**

Teaching lectures (1 class)	Practical classes (1 class)
Superficial (muscles of face and sculp) and deep muscles (muscles of mastication) of the head.	Superficial (muscles of face and sculp) and deep muscles (muscles of mastication) of the head. • Identification and description of muscles

**MUSCLES OF THE ANTERIOR, STERNOCLEIDOMASTOID, LATERAL AND POSTERIOR
REGION OF THE NECK**

Teaching lectures (2 classes)	Practical classes (1 class)
Muscles of the anterior, sternocleidomastoid, lateral and posterior region of the neck	Muscles of the anterior, sternocleidomastoid, lateral and posterior region of the neck • Identification and description of muscles

**TOPOGRAPHIC REGIONS OF THE HEAD AND NECK. CERVICAL PLEXUS (PLEXUS
CERVICALIS)**

Teaching lectures (2 classes)	Practical classes (1 class)
Topographic regions of the head. Topographic regions of the neck. Cervical plexus.	Topographic regions of the head. • Superficial areas • Deep regions Topographic regions of the neck. • The anterior (regio cervicalis anterior), sternocleidomastoid (regio sternocleidomastoidea), lateral (regio cervicalis lateralis) and posterior region of the neck (regio cervicalis posterior) • Cervical plexus.

WEEK – 4:**CRANIAL NERVES**

Teaching lectures (4 classes)	Practical classes (2 classes)
Cranial nerves.	Cranial nerves • Identification and description of the origin, course, relations, side and terminal branches and innervation area

**VEGETATIVE GANGLIONS OF THE HEAD AND NECK. SYMPATHETIC AND
PARASYMPATHETIC NERVOS SYSTEM OF THE HEAD AND NECK**

Teaching lectures (1 class)	Practical classes (1 class)
Vegetative ganglions of the head and neck. Sympathetic and parasympathetic sytem of head and neck	Vegetative ganglions of the head and neck. Sympathetic and parasympathetic sytem of head and neck

WEEK – 5:**ARTERIAL SYSTEM OF THE HEAD AND NECK**

Teaching lectures (3 classes)	Practical classes (2 classes)
Vascularization of the head and neck. A. carotis communis A. carotid externa A. internal carotid A. subclavia	Vascularization of the head and neck. A. carotis communis A. carotid externa A. internal carotid A. Subclavia

VENOUS AND LYMPH SYSTEM OF THE HEAD AND NECK

Teaching lectures (2 classes)	Practical classes (1 class)
Veins of the head and neck System of internal jugular vein (v. jugularis interna) System of external jugular vein (v. jugularis externa) V. jugularis anterior, v. vertebralis, v. cervicalis profunda, c. thyroidea inferior Lymphatic system of the head and neck	Veins of the head and neck System of internal jugular vein (v. jugularis interna) System of external jugular vein (v. jugularis externa) V. jugularis anterior, v. vertebralis, v. cervicalis profunda, c. thyroidea inferior Lymphatic system of the head and neck

WEEK – 6:**ORAL CAVITY AND ITS CONTENTS**

Teaching lectures (3 classes)	Practical classes (2 classes)
Oral cavity and its contents.	Oral cavity and its contents. • Identification and description of the morphological characteristics of the oral cavity (lips, cheek, vestibule of the oral cavity, gums, teeth, tongue, sublingual region of the oral cavity, hard palate, soft palate, pharyngeal constriction, palatine tonsil, salivary glands)

PHARYNX, PARAPHARYNGEAL AND RETROPHARYNGEAL SPACE

Teaching lectures (2 classes)	Practical classes (1 class)
Pharynx, parapharyngeal and retropharyngeal space	Pharynx: • Identification and description of morphological characteristics of the pharynx (position, boundaries, external appearance and relations, composition of walls and division into floors, blood vessels and nerves of the pharynx) Parapharyngeal and retropharyngeal space

WEEK – 7:**NASAL CAVITIES AND PARANASAL SINUSES**

Teaching lectures (2 classes)	Practical classes (1 class)
Nasal cavity and paranasal sinuses.	Nasal cavity and paranasal sinuses. • Identification and description of the morphological characteristics of the nasal cavity (walls, openings of the nasal cavity, division of the nasal cavity, mucous membrane, vessels and nerves) • Identification and description of the morphological characteristics of the paranasal cavities (types, dimensions, walls, connections with the nasal cavity, mucous membrane, vessels and nerves)

LARYNX, THYROID AND PARATHYROID GLANDS

Teaching lectures (3 classes)	Practical classes (2 classes)
Larynx, thyroid and parathyroid glands	Larynx, thyroid and parathyroid glands • Identification and description of morphological characteristics of the larynx (shape, position, structure, cartilages of the larynx, connections and joints of the larynx cartilages, muscles of the larynx, laryngeal cavity, vocal cords) • Anatomy of the thyroid and parathyroid glands

WEEK – 8:**LAYERS OF EYEBALL**

Teaching lectures (2 classes)	Practical classes (1 class)
Layers of eyeball	Layers of eyeball • Identification and description of the morphological characteristics of the sense of sight (eyeball, shape, layers of the eyeball: fibrous, vascular and inner layer of the eyeball). Vascularization and innervation of eyeball

CONTENT OF EYEBALL (REFRACTIVE MEDIA AND COMPARTMENTS OF EYEBALL)

Teaching lectures (1 class)	Practical classes (1 class)
Contents of eyeball	• Identification and description of the morphological characteristics of the contents of the eyeball (lens, chambers of eyeball, humor aquosus, vitreous body)

AUXILIARY ORGANS OF THE EYE. LACRIMAL APPARATUS.

Teaching lectures (2 classes)	Practical classes (1 class)
Auxiliary organs of the eye. Lacrimal apparatus.	- Identification and description of the auxiliary organs of the eye: extra-ocular muscles of orbit, supporting apparatus (fascial sheath), retrobulbar fat, eyelids, lacrimal organs) - Cranial nerves (II, III, IV, VI)

WEEK – 9:**EXTERNAL EAR**

Teaching lectures (1 class)	Practical classes (1 class)
External ear.	Sense of hearing • Identification and description of the morphological characteristics of the external ear: auricle, external ear canal; tympanic membrane; middle ear: tympanic cavity, walls, auditory ossicles, division into floors of the tympanic cavity, vessels and nerves, mastoid cavities, auditory tube)

MIDDLE EAR

Teaching lectures (2 classes)	Practical classes (1 class)
Middle ear.	• Identification and description of the morphological characteristics of the middle ear: tympanic cavity, walls, auditory ossicles, division into floors of the tympanic cavity, vessels and nerves, mastoid cavities, auditory tube

INNER EAR

Teaching lectures (2 classes)	Practical classes (1 class)
Inner ear.	• Identification and description of the morphological characteristics of the inner ear: bony labyrinth - vestibule, cochlea, semicircular canals, perilymphatic space, membranous labyrinth, vessels and nerves Cranial nerve (VIII)

THE SECOND MODULE: ANATOMY OF THE CENTRAL NERVOUS SYSTEM

WEEK – 10:

GENERAL ABOUT THE CENTRAL NERVOUS SYSTEM (CNS)

Teaching lectures (2 classes)	Practical classes (1 class)
General concepts and divisions of CNS Neuron, Glia. Synapse, transmission. Neurotransmitters: cholinergic, biogenic amines, amino acids Neuromodulators: peptides and hormones, General concepts and divisions of CNS.	General about the central nervous system (CNS) Neuron. Synapse. Neurotransmitters. Division of the nervous system

SPINAL CORD, SPINAL NERVE

Teaching lectures (3 classes)	Practical classes (2 classes)
Spinal cord (Medulla spinalis) and spinal nerv (nervus spinalis)	Spinal cord (Medulla spinalis) and spinal nerv (nervus spinalis) • Identification and description of the morphological characteristics of the spinal cord (position, sheaths (meninges), shape, length, extensions, sides, segments) • Identification and description of the organization of the gray and white mass of the spinal cord (columns, horns, laminae, motor neurons, sensory neurons, autonomic vegetative neurons) • Identification and description of the morphological characteristics of the spinal nerve (n. spinalis) - the number of spinal nerves and their division in relation to spinal cord segments, anterior and posterior root, spinal ganglion, branches (anterior, posterior, communicating, meningeal)

WEEK – 11:

TRUNCUS CEREBRI (BRAIN STEM)

Teaching lectures (3 classes)	Practical classes (2 classes)
Truncus cerebri (brain stem): Medulla oblongata. Pons. Mesencephalon structure and function	Truncus cerebri (brain stem): Medulla oblongata. Pons. Mesencephalon structure and function • Identification and description of the morphological characteristics of the brain stem (truncus cerebri) - division, sides, boundaries, structure Nuclei of the brain stem

CEREBELLUM. 4th VENTRICLE (VENTRICULUS QUARTUS)

Teaching lectures (2 classes)	Practical classes (1 class)
Cerebellum (cerebellum), structure and function Ventriculus quartus (fourth cerebral ventricle)	Cerebellum (cerebellum), structure and function Ventriculus quartus (fourth cerebral ventricle) • Identification and description of the morphological characteristics of the cerebellum (parts - vermis, hemispheres cerebelli, external morphology – foliae (whorls), fissures, sides, lobes, pontocerebellar angle, structure - cortex, sails, white matter) • Describing the functional division of the cerebellum (vestibulocerebellum, spinocerebellum, pontocerebellum)

WEEK – 12:**DIENCEPHALON (МЕЃУМОЗАК)**

Teaching lectures (4 classes)	Practical classes (2 classes)
Diencephalon (Thalamus, Hypothalamus, Epithalamus, Metathalamus, Subthalamus)	Diencephalon (Thalamus, Hypothalamus, Epithalamus, Metathalamus, Subthalamus) • Nuclei of the thalamus, hypothalamus, metathalamus, epithalamus, subthalamus - position, connections, role

HYPOPHYSIS. 3rd VENTRICLE (VENTRICULUS TERTIUS)

Teaching lectures (1 class)	Practical classes (1 class)
Hypophysis. Ventriculus tertius (third cerebral ventricle).	- Hypophysis. Ventriculus tertius (third cerebral ventricle)

WEEK – 13:**TELENCEPHALON (CEREBRUM)**

Teaching lectures (5 classes)	Practical classes (3 classes)
Telencephalon (cerebrum) Cortex cerebri (cerebral cortex), types of cortex. Functional division of the cortex Posterior parietal cortex Prefrontal cortex Ventricles of the brain Meninges Hippocampus, subiculum, gyrus dentatus (hippocampal formation) Fornix, Brain commissurae (commissural pathways)	Telencephalon (cerebrum) Cortex cerebri (cerebral cortex), types of cortex • Identification and description of the morphological characteristics of the cerebral hemispheres (sides, grooves and gyri of the cerebral cortex, lobes - frontal, parietal, occipital, temporal, insula) • Identification and description of the characteristics of the meninges (meninges - dura mater, arachnoid, pia mater) Cerebral ventricles. Functional division of the cortex • Identification and description of the boundaries of the functional zones of the cerebral cortex (sensory fields - primary and secondary, motor fields - primary, premotor, motor speech, frontal eye, associative areas of the cortex) Brain commissurae • Identification and description of the commissural pathways of the cerebrum

WEEK – 14:**SUBCORTICAL GRAY MASS**

Teaching lectures (2 classes)	Practical classes (1 class)
Subcortical gray matter, striatum, claustrum, septal nuclei, basal telencephalon nuclei	Subcortical gray matter, striatum, claustrum, septal nuclei, basal telencephalon nuclei Extrapyramidal motor system

CORPUS AMYGDALOIDEUM AND LYMBIC SYSTEM

Teaching lectures (2 classes)	Practical classes (1 class)
Corpus amygdaloideum Extended amygdala, stria terminalis Nc. accumbens Limbic structures and connections Emotional systems of the brain Cognitive and memory systems of the brain	Corpus amygdaloideum Extended amygdala, stria terminalis Nc. accumbens Limbic structures and connections Emotional systems of the brain Cognitive and memory systems of the brain

SEXUAL DIMORPHISM OF THE BRAIN

Teaching lectures (1 class)	Practical classes (1 class)
Sexual dimorphism of the brain	Sexual dimorphism of the brain

WEEK – 15:**MOTOR AND SENSITIVE PATHWAYS**

Teaching lectures (2 classes)	Practical classes (1 class)
Motorways. Capsula interna, Capsula externa, Capsula extrema. Sensitive ways	Motorways. Capsula interna, Capsula externa, Capsula extrema.

SENSORY PATHWAYS

Teaching lectures (2 classes)	Practical classes (1 class)
Optical pathway, Auditory pathway Gustatory pathway, Olfactory pathway	Sensitive ways

BLOOD VESSELS OF THE BRAIN

Teaching lectures (1 class)	Practical classes (1 class)
Blood vessels of the brain	Optical pathway, Auditory pathway Gustatory pathway, Olfactory pathway

SCHEDULE OF LECTURES

INTERNAL CLINIC HALL

MONDAY

08:00 - 12:00

SCHEDULE OF PRACTICAL CLASSES

MONDAY	
R9-1	R9-2
12:15 – 14:30 group I	12:15 – 14:30 group II
14:30 – 16:45 group III	14:30 – 16:45 group IV
16:45 – 19:00 group V	16:45 – 19:00 group VI
TUESDAY	
R9-1	
08:00 – 10:15 group VII	

Schedule of lectures, practical classes and tests – academic calendar

LESSONS SCHEDULE FOR THE COURSE ANATOMY 2

module	week	type	Unit name	A teacher
1	1	L	Osteology of the skull. Cervical spinal vertebrae. Head and neck joints.	ass. prof. dr Predrag Sazdanović
1	1	P	Osteology of the skull. Cervical spinal vertebrae. Head and neck joints.	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	1			
1	2	L	Facial osteology. Temporomandibular joint (Art. temporomandibularis). Craniofacial cavities (orbit, nasal cavity, infratemporal fossa, pterygopaltine fossa).	prof. dr Ivana Živanović-Mačužić
1	2	P	Facial osteology. Temporomandibular joint (Art. temporomandibularis). Craniofacial cavities (orbit, nasal cavity, infratemporal fossa, pterygopaltine fossa).	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	2			
1	3	L	Muscles of the head and neck. Topographic regions of the head and neck. Cervical plexus.	Prof. dr Maja Vulović
1	3	P	Muscles of the head and neck. Topographic regions of the head and neck. Cervical plexus.	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	3			
1	4	L	Cranial nerves. Vegetative ganglions of the head. Sympathetic and parasympathetic system of the head and neck.	prof. dr Ivana Živanović-Mačužić
1	4	P	Cranial nerves. Vegetative ganglions of the head. Sympathetic and parasympathetic system of the head and neck.	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović

LESSONS SCHEDULE FOR THE COURSE ANATOMY 2

module	week	type	Unit name	A teacher
1	4			Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	5	L	Arterial, venous and lymphatic system of the head and neck	ass. prof. dr Predrag Sazdanović
1	5	P	Arterial, venous and lymphatic system of the head and neck	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	5			
1	6	L	Oral cavity. Pharynx. Parapharyngeal and retropharyngeal space.	Prof. dr Maja Vulović
1	6	P	Oral cavity. Pharynx. Parapharyngeal and retropharyngeal space.	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	6			
1	7	L	Nasal cavity and paranasal sinuses. Larynx, thyroid and parathyroid glands	prof. dr Ivana Živanović-Mačužić
1	7	P	Nasal cavity and paranasal sinuses. Larynx, thyroid and parathyroid glands	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	7			

LESSONS SCHEDULE FOR THE COURSE ANATOMY 2

module	week	type	Unit name	A teacher
1	8	L	Anatomy of the eye and orbit	ass. prof. dr Predrag Sazdanović
1	8	P	Anatomy of the eye and orbit	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	8			
1	9	L	Anatomy of the ear	Prof. dr Maja Vulović
1	9	P	Anatomy of the ear	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
1	9			
		TEST BY MODULE	TEST – MODULE 1	
2	10	L	General about the central nervous system (CNS) Neuron. Synapse. Neurotransmitters. Division of the nervous system. Spinal cord, spinal nerve.	prof. dr Ivana Živanović-Mačužić
2	10	P	General about the central nervous system (CNS) Neuron. Synapse. Neurotransmitters. Division of the nervous system. Spinal cord, spinal nerve.	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
2	10			
2	11	L	Truncus cerebri (brain stem): medulla oblongata, pons, midbrain. Cerebellum (cerebellum). Ventriculus quartus (fourth cerebral ventricle).	Prof. dr Maja Vulović

LESSONS SCHEDULE FOR THE COURSE ANATOMY 2

module	week	type	Unit name	A teacher
2	11	P	Truncus cerebri (brain stem): medulla oblongata, pons, midbrain. Cerebellum (cerebellum). Ventriculus quartus (fourth cerebral ventricle).	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
2	11			
2	12	L	Diencephalon (midbrain). Hypophysis. Ventriculus tertius (third cerebral ventricle).	ass. prof. dr Predrag Sazdanović
2	12	P	Diencephalon (midbrain). Hypophysis. Ventriculus tertius (third cerebral ventricle).	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
2	12			
2	13	L	Telencephalon. Cortex cerebri. Types of cortex. Functional division of the cortex. Brain junctions. Hippocampal formation. Fornix. Cerebral ventricles. Meninges.	Prof. dr Maja Vulović
2	13	P	Telencephalon. Cortex cerebri. Types of cortex. Functional division of the cortex. Brain junctions. Hippocampal formation. Fornix. Cerebral ventricles. Meninges.	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
2	13			
2	14	L	Subcortical gray matter, striatum, claustrum. Septal nuclei, nuclei of the basal telencephalon. Corpus amygdaloideum. Nc. accumbens. Limbic structures and connections. Emotional, cognitive and memory systems of the brain. Extrapyramidal motor system. Sexual dimorphism of the brain	prof. dr Ivana Živanović-Mačužić
2	14	P	Subcortical gray matter, striatum, claustrum. Septal nuclei, nuclei of the basal telencephalon. Corpus amygdaloideum. Nc. accumbens. Limbic structures and	Prof. dr Ivana Živanović-Mačužić Prof. dr Maja Vulović

LESSONS SCHEDULE FOR THE COURSE ANATOMY 2

module	week	type	Unit name	A teacher
2	14		connections. Emotional, cognitive and memory systems of the brain. Extrapyramidal motor system. Sexual dimorphism of the brain	Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
2	15	L	Motor pathways. Sensitive pathways. Sensory pathways. Capsula interna, Capsula externa, Capsula extrema. Blood vessels of the brain.	ass. prof. dr Predrag Sazdanović
2	15	P	Motor pathways. Sensitive pathways. Sensory pathways. Capsula interna, Capsula externa, Capsula extrema.	Prof. dr Ivana Živanović-Maćužić Prof. dr Maja Vulović Ass. Prof. dr Predrag Sazdanović Ass. Prof. dr Dejan Jeremić dr Miloš Stepović dr Kristijan Jovanović dr Ivona Banković
2	15			
		TEST BY MODULE	TEST – MODULE 2	

Committees for taking the oral exam:

Commission:

1. prof. dr. Ivana Živanović-Mačužić, president of the examination committee
2. prof. dr. Predrag Sazdanović, member
3. prof. dr. Maja Vulović, member

ANATOMY 2

EXAMINATION QUESTIONS

OSTEOLOGY OF THE SKULL AND FACE

1. Os frontale (frontal bone)
2. Os sphenoidale (sphenoid bone)
3. Os ethmoidale (Ethmoidal bone)
4. Os occipitale (Occipital bone)
5. Os temporale (Temporal bone)
6. Facial bones,
7. Maxilla (Upper Jaw)
8. Mandible (Lower Jaw)
9. Os palatinum (Palate bone)
10. Os zygomaticum (Zygomatic bone)
11. Os lacrimale (Lacrymal bone)
12. Nasal axis (nasal bone)
13. Vomer
14. Concha nasalis inferior (Inferior nasal concha)
15. Os hyoideum (hyoid bone)
16. Nasal cavity
17. Orbit
18. Fossa infratemporalis (Infratemporal fossa), walls and contents
19. Fossa pterygopalatina (Pterygopalatine fossa), walls and contents
20. Fissura orbitalis superior
21. Fissura orbitalis inferior
22. Canalis palatinus major
23. Canalis opticus
24. Canalis pterygoideus
25. Openings (orifices) of the base of the skull
26. Cranial fossae
27. Pyramid (pars petrosa) of the temporal bone
28. Vertebrae cervicales (cervical vertebrae)

HEAD AND NECK

1. Art. temporomandibularis
2. Joints of the head with the neck
3. Upper head joint or atlantooccipital joint (articulatio atlantooccipitalis)
4. The lower joint of the head or the joint between the 1st and 2nd cervical vertebra
5. Central atlantoaxial joint (articulatio atlantoaxialis mediana)
6. Lateral atlantoaxial joint (articulatio atlantoaxialis lateralis)
7. Connective joint between the occipital bone and the 2nd cervical vertebra
8. Posterior cervical ligament (lig. nuchae)
9. Superficial or subcutaneous muscles of the head
10. Muscle of the vault of the skull (m. epicranius)
11. Occipital-frontal muscle (m. occipitofrontalis)
12. Aponeurosis of the skull vault (galea aponeurotica)
13. Muscles of the external ear
14. Eyelid and eyebrow muscles
15. Circular eye muscle (m. orbicularis oculi)
16. Muscle corrugator supercilli (m. corrugator supercilli)
17. Eyebrow depressor muscle (m. depressor supercilli)
18. Muscles of the external nose
19. Thin muscle (m. processus)
20. Nasal muscle (m. nasalis)
21. Depressor septi muscle (m. depressor septi)
22. Lip, cheek and chin muscles
23. Circular muscle of the lips (m. orbicularis oris)
24. Muscle depressor anguli oris (m. depressor anguli oris)
25. Transverse chin muscle (m. transversus menti)
26. M. risorius
27. M. zygomaticus major
28. M. zygomaticus minor
29. Levator labii superioris muscle
30. M. levator labii superioris alaeque nasi

31. M. depressor labii inferioris
32. M. levator anguli oris
33. Cheek muscle (m. buccinator)
34. Chin muscle (m. mentalis)
35. Deep or masticatory muscles of the head
36. Masseteric muscle (m. masseter)
37. Temporal muscle (m. temporalis)
38. M. pterygoideus lateralis
39. M. pterygoideus medialis
40. Muscles of the front of the neck
41. Muscles of the subcutaneous layer of the front of the neck
42. Platysma
43. Muscles of the subcutaneous and superficial layers of the front of the neck
44. Sternocleidomastoid muscle (m. sternocleidomastoideus)
45. Muscles of the middle layer of the front of the neck
46. Nuchal muscles (mm. nuchales)
47. M. digastricus
48. Stylohyoid muscle (m. stylohyoideus)
49. Mylohyoid muscle (m. mylohyoideus)
50. Geniohyoid muscle (m. geniohyoideus)
51. Subhyoid muscles (mm. infrahyoidei)
52. Sternohyoid muscle (m. sternohyoideus)
53. Omohyoid muscle (m. omohyoideus)
54. Sternothyroid muscle (m. sternothyroideus)
55. Thyrohyoid muscle (m. thyrohyoideus)
56. Muscles of the deep layer of the front of the neck
57. Prevertebral muscles
58. Scalene muscles
59. Anterior and posterior scalene foramen
60. Muscles of the first or superficial layer of the back of the neck
61. Muscles of the second layer of the back of the neck
62. Muscles of the third layer of the back of the neck
63. Muscles of the fourth or deep layer of the back of the neck
64. Submandibular or submandibular space
65. Common carotid artery (a. carotis communis)
66. External carotid artery (a. carotis externa)
67. Lateral branches of the external carotid artery
68. Upper thyroid artery (a. thyroidea superior)
69. Lingual artery (a. lingualis)
70. Facial artery (a. facialis)
71. Ascending pharyngeal artery (a. pharyngea ascendens)
72. Occipital artery (a. occipitalis)
73. Posterior ear artery (a. auricularis posterior)
74. Terminal branches of the external carotid artery
75. Superficial temporal artery (a. temporalis superficialis)
76. Maxillary artery (a. maxillaris)
77. Side branches of the jaw part a. maxillaris
78. Side branches of the pterygoid part a. maxillaris
79. Side branches of the pterygopalatine part a. maxillaris
80. Terminal branch of a. maxillaris
81. Internal carotid artery (a. carotis interna)
82. Ophthalmic artery (a. ophthalmica)
83. Side and terminal branches a. internal carotid artery
84. A. subclavia
85. Side and terminal branches of a. subclavia
86. Vertebral artery (a. vertebralis)
87. Basilar artery (a. basilaris)
88. Trunk of the internal jugular vein (v. jugularis interna)
89. Initial branches of the internal jugular vein (v. jugularis interna)
90. Venous sinuses of skull (sinus venosus)
91. Cavernous sinus (sinus cavernosus)
92. Supply (afferent) sinuses of the cavernous sinus group
93. Drainage sinuses of the cavernous sinus group
94. Confluence of the sinuses (confluens sinuum)
95. Afferent sinuses of the confluens sinus group
96. Drainage sinuses of the confluens sinus group
97. Venous tributaries of the dura mater sinuses
98. Veins of the orbit
99. Side tributaries of the internal jugular vein
100. Pharyngeal veins (venae pharyngeae)

101. Facial vein (v. facialis)
102. V. retromandibularis
103. Lingual vein (v. lingualis)
104. Upper and middle thyroid veins (v. thyroidea superior et mediae)
105. Subclavian vein (v. subclavia)
106. System of the external jugular vein (v. jugularis externa)
107. Maxillary veins (vv. maxillares)
108. Lymphatic nodes of the head
109. Lymph nodes of the neck
110. Lymphatic vessels of the head and neck
111. Nerves of the head and neck
112. Olfactory nerves (nn. olfactorii)
113. Optic nerve (n. opticus)
114. Oculomotor nerve (n. oculomotorius)
115. Trochlear nerve (n. trochlearis)
116. Trigeminal nerve (n. trigeminus)
117. Ophthalmic nerve (n. ophthalmicus-V1)
118. Ciliary ganglion (ganglion ciliare)
119. Nn. ciliares breves
120. Maxillary nerve (n. maxillaris-V2)
121. Pterygopalatine ganglion (ganglion pterygopalatinum)
122. Mandibular nerve (n. mandibularis – V3)
123. Vegetative ganglions of the mandibular nerve
124. Ganglion oticum
125. Submandibular ganglion
126. Abducent nerve (n. abducens)
127. Facial nerve (n. facialis)
128. Vestibulocochlear nerve (n. vestibulocochlearis)
129. Glossopharyngeal nerve (n. glossopharyngeus)
130. Vagus nerve (n. vagus)
131. Accessory nerve (n. accessorius)
132. Hypoglossal nerve (n. hypoglossus)
133. N. petrosus major
134. Chorda tympani
135. N. tympanicus
136. Plexus tympanicus
137. N. petrosus minor
138. N. lingualis
139. Inferior alveolar nerve
140. N. auriculotemporalis
141. N. nasociliaris
142. N. maxillaris – side branches
143. N. infraorbitalis
144. Sensitive ganglions of cranial nerves
145. Sensitive innervation of the face
146. Cervical plexus (plexus cervicalis)
147. Posterior branches of the cervical nerves (rami dorsales nn. cervicalium)
148. Sympathetic trunk – cervical part
149. Branches of the upper cervical ganglion
150. Internal carotid plexus (plexus caroticus internus)
151. Branches of the middle cervical ganglion
152. Branches of the inferior cervical or stellate ganglion
153. Parasympathetic branches of cranial nerves
154. Oral cavity (cavum oris)
155. Vestibule of the oral cavity (vestibulum oris)
156. Lips (labia oris)
157. Cheek (bucca)
158. Blood vessels and nerves of the gums (gingivae)
159. Blood vessels and nerves of teeth
160. The oral cavity (cavum oris proprium)
161. Hard palate (palatum durum)
162. Soft palate (palatum molle)
163. Tongue (lingua) - description, composition
164. Tongue muscles
165. Vessels and nerves of the tongue
166. Sublingual region (regio sublingualis)
167. Sublingual salivary gland (glandula sublingualis)
168. Submandibular salivary gland (glandula submandibularis)
169. Parotid gland (glandula parotis)
170. Pharyngeal narrowing (isthmus faucium)
171. Pharynx - description and relationships
172. Pharyngeal cavity (cavum pharyngis)
173. Waldeyer's lymphatic ring
174. Structure of the pharynx
175. Muscular layer of the pharynx (tunica muscularis pharyngis)
176. Pharyngeal constrictor muscles
177. Levator pharyngeal muscles
178. Blood vessels and nerves of the pharynx
179. External nose (nasus externus)
180. Nasal cavity (cavum nasi) – walls and relations of the nasal cavity
181. Nasal passages (meatus), drainage of paranasal cavities
182. Mucous membrane of the nose (tunica mucosa nasi)
183. Blood vessels and nerves of the nasal cavity

184. Frontal sinus (sinus frontalis)
185. Ethmoid sinus (sinus ethmoidales)
186. Maxillary sinus (sinus maxillaris)
187. Sphenoid sinus (sinus sphenoidalis)
188. Larynx - description and relations of the larynx
189. Larynx cartilages (cartilagine laryngis)
190. Joints of laryngeal cartilages
191. Muscles of the larynx (musculi laryngis)
192. Structure of the larynx
193. Aditus laryngis
194. Plicae vocales
195. Blood vessels and nerves of the larynx
196. Eyeball (bulbus oculi)
197. Eyeball layers
198. The outer or fibrous membrane of the eyeball (tunica fibrosa bulbi)
199. Cornea
200. Sclera
201. Middle or vascular membrane of the eyeball (tunica vasculosa bulbi)
202. Iris
203. Ciliary body (corpus ciliare)
204. Choroid
205. Vessels, nerves of the middle or vascular membrane of the eyeball
206. Inner membrane of the eyeball (tunica interna bulbi)
207. Pigment layer (stratum pigments) of the inner membrane of the eyeball
208. Retina or retina (retina)
209. Visual or optical part of the retina (pars optica retinae)
210. Macula lutea
211. Discus of optic nerve
212. Blood vessels of the retina (vasa sanguinea retinae)
213. Contents of the eyeball
214. Anterior chamber of the eyeball (camera anterior bulbi)
215. Posterior chamber of the eyeball (camera posterior bulbi)
216. Aqueous humor (humor aquosus)
217. Lens
218. Vitreous body (corpus vitreum)
219. Auxiliary organs of the eye (organa oculi accessoria)
220. Extra-ocular muscles (musculi bulbi)
221. Mm. recti of the eyeball
222. Oblique muscles of the eyeball
223. Eyelids (palpebrae)
224. Conjunctiva (tunica conjunctiva)
225. Lacrimal apparatus (apparatus lacrimalis)
226. Drainage organs of tears
227. Organ of hearing and balance (organum vestibulocochleare)
228. External ear (auris externa)
229. Tympanic membrane (membrana tympani)
230. Middle ear (auris media)
231. Tympanic cavity (cavum tympani)
232. The walls of tympanic cavity
233. Auditory ossicles (ossicula auditus)
234. Vessels and nerves of the tympanic cavity
235. Eustachian tube (tuba auditory)
236. Mastoid cave (antrum mastoideum)
237. Inner ear (auris interna)
238. Bone labyrinth (labyrinthus osseus)
239. Cochlea
240. Vestibulum
241. Bony semicircular canals (canales semicircularesosseus)
242. Membranous labyrinth (labyrinthus membranaceus)
243. Membranous cochlea (ductus cochlearis)
244. Membranous semicircular canals (ductus semicirculares)
245. Utriculus and the utriculo-saccular duct (ductus utriculosaccularis)
246. Sacculus and connecting duct (ductus reuniens)
247. Endolymphatic duct (ductus endolymphaticus) and endolymphatic sac (saccus endolymphaticus)
248. Perilymphatic space (spatium perilymphaticum)
249. Vessels and nerves of the inner ear
250. Topographic regions of the face (regiones faciei)
251. Chin area (regio mentalis)
252. Buccal region (regio buccalis)
253. Parotidomasseteric region (regio parotideomasseterica)
254. Parotid region
255. Parotid lodge
256. Masseteric region
257. Infratemporal region (regio infratemporalis)
258. Parapharyngeal space
259. Prestyloid space (spatium prestyloideum)
260. Retrostyloid space (spatium retrostyloideum)
261. Retropharyngeal space
262. Topographic regions of the neck
263. Front region of the neck (regio colli anterior)

264. Submandibular triangle (trigonum submandibulare)
265. Carotid triangle (trigonum caroticum)
266. Sternocleidomastoid region (regio sternocleidomastoidea)

CNS

1. Division of the nervous system
2. Spinal cord (medulla spinalis) - external morphology
3. The gray matter of the spinal cord
4. The white matter of the spinal cord
5. Spinal nerve (n. spinalis)
6. Arterial blood vessels of the spinal cord
7. Meninges spinales
8. Division and boundaries of the brain stem (truncus cerebri)
9. Medulla oblongata
10. Pons
11. Middle brain (mesencephalon)
12. Ventral side of the brainstem
13. Lateral sides of the brain stem
14. Dorsal side of the brain stem
15. Rhombus fossa (fossa rhomboidea)
16. Tectum mesencephalicum
17. Brainstem gray matter
18. Motor nuclei of the brain nerves
19. Sensitive nuclei of brain nerves
20. Nucleus of the twelfth cranial nerve (n. hypoglossus)
21. Nuclei of the eleventh cranial nerve (n. accessorius)
22. Nuclei of the tenth cranial nerve (n. vagus)
23. Nuclei of the ninth cranial nerve (n. glossopharyngeus)
24. Nuclei of the eighth cerebral nerve (n. vestibulocochlearis)
25. Nuclei of Cochlear nerve (n. cochlearis)
26. Nuclei of the vestibular nerve (n. vestibularis)
27. Nuclei of the seventh cranial nerve (n. facialis)
28. Nuclei of the sixth cranial nerve (n. abducens)
29. Nuclei of the fifth cranial nerve (n. trigeminus)
30. Nucleus of the fourth cerebral nerve (n. trochlearis)
31. Nuclei of the third cerebral nerve (n. oculomotorius)
32. Pupillary reflex to light
33. Nc. ruber

34. Relay nuclei of the brain stem
35. Relay nuclei of the medulla oblongata
36. Relay nuclei of the brain bridge
37. Relay nuclei of the midbrain
38. Substantia nigra
39. Pretectal area (area pretectalis)
40. Reticular formation of the brain stem
41. Fasciculus longitudinalis medialis
42. Cerebellum
43. External morphology of the cerebellum
44. Pontocerebellar angle (angulus pontocerebellaris)
45. Cortex cerebelli
46. Cerebellar nuclei
47. Functional division of the cerebellum
48. Cerebellar pathways
49. Tractus spinocerebellaris posterior (Flechsig)
50. Tractus cuneocerebellaris
51. Tr. spinocerebellaris anterior (Gowers)
52. Fourth ventricle (ventriculus IV)
53. Midbrain (diencephalon) - parts, boundaries
54. Ventriculus III
55. Thalamus
56. Nuclei of the thalamus
57. Anterior group of nuclei of the thalamus
58. Lateral group of nuclei of the thalamus
59. Ventrolateral group of nuclei of the thalamus
60. Dorsolateral group of nuclei of the thalamus
61. Medial group of nuclei of the thalamus
62. Posterior group of nuclei of the thalamus
63. Intralaminar nuclei of the thalamus
64. Reticular nucleus of the thalamus
65. Metathalamus
66. Corpus geniculatum laterale
67. Corpus geniculatum mediale
68. Epithalamus
69. Subthalamus
70. Hypothalamus
71. The nuclei of the hypothalamus
72. Anterior region of hypothalamus (regio hypothalamica anterior)
73. The preoptic group of nuclei within the regio hypothalamica anterior
74. The supraoptic group of nuclei within the regio hypothalamica anterior

75. Tuberoinfundibular region (regio tuberoinfundibularis)
76. Posterior hypothalamic region (regio hypothalamica posterior)
77. Lateral hypothalamic area (regio hypothalamica lateralis)
78. Pituitary gland
79. Vascularization of the pituitary gland
80. Pedunculi thalami
81. Fasciculus longitudinalis dorsalis (Schutz)
82. Tractus tegmentalis centralis
83. Telencephalon s. cerebrum
84. Cerebral cortex (cortex cerebri)
85. The frontal lobe (lobus frontalis) of the cerebrum
86. Parietal lobe (lobus parietalis) of the cerebrum
87. Occipital lobe (lobus occipitalis) of the cerebrum
88. The temporal lobe (lobus temporalis) of the cerebrum
89. Insula
90. Structure of the cerebral cortex
91. Functional zones of the cerebral cortex
92. Sensory fields of the cerebral cortex
93. Motor fields of the cerebral cortex
94. Associative fields of the cerebral cortex
95. The limbic system
96. Limbic cortex
97. The medial area of the limbic cortex
98. Basolateral area of the limbic cortex
99. Connections of the limbic cortex
100. Subcortical limbic nuclei
101. Amygdaloid complex of nuclei (corpus amygdaloideum)
102. Basal telencephalon
103. Regio septalis
104. Subcortical gray matter (basal ganglia - nuclei basales))
105. Striated body (corpus striatum)
106. Nucleus caudatus
107. Nucleus lentiformis
108. Claustrum
109. Nucleus accumbens
110. Centrum semiovale
111. Brain capsules (capsulae)
112. Capsula extrema
113. Capsula externa
114. Capsula interna
115. Corpus callosum
116. Commissura cerebri anterior
117. Commissura fornicis s. commissura hippocampi
118. Ventriculus lateralis
119. Pathways of the central nervous system
120. Motor pathways of the central nervous system
121. Pyramidal tract (tractus corticospinalis s. pyramidalis)
122. Corticonuclear pathway (tractus corticonuclearis)
123. Extrapyramidal pathways of the central nervous system
124. Sensitive pathways of the central nervous system
125. Spinothalamic tract (tractus spinothalamicus Edinger)
126. Medial lemniscus system (lemniscus medialis)
127. Optical pathway
128. Acoustic pathway
129. Vestibular pathway
130. Gustatory pathway
131. Olfactory pathway
132. Meninges
133. Arterial blood vessels of the brain
134. Internal carotid artery (a. carotis interna)
135. Anterior cerebral artery (a. cerebri anterior)
136. Anterior communicating artery (a. communicans anterior)
137. Posterior communicating artery (a. communicans posterior)
138. Middle cerebral artery (a. cerebri media)
139. Anterior choroidal artery (a. choroidea anterior)
140. Vertebral artery (a. vertebralis)
141. Posterior cerebral artery (a. cerebri posterior)
142. Venous blood vessels of the brain