Name of the course	**Anatomy**				**Code**	
Type of study program Cycle	Integrated university study, medicine				**Year of study**	I
Credits (ECTS) :	**18**	*Semester*	II		Number of hours per semester (l+e+s)	210 (60+62+88)
Status of the course:	mandatory	*Preconditions:*	/	*Comparative conditions:*		/
Access to course:	First year medical students			*Hours of instructions*:		According to schedule

Course teacher:	Professor Ljerka Ostojić, MD, PhD Professor Zdenko Ostojić, MD, PhD Professor Ivan Vinter, MD, PhD Professor Dragica Bobinac, MD, PhD Professor Ivana Marić, MD, PhD
Consultations:	As agreed with students
E-mail address and phone number:	ljerka.ostojic@sve-mo.ba
Associate teachers	Pejana Rastović, MD Marko Ostojić, MD, PhD Josip Lesko, MD Josip Novaković, MD, PhD Josip Mišković, MD, PhD Zdenka Zovko, BSc MLD
Consultations:	As agreed with students
E-mail address and phone number:	
The aims of the course:	The aims of the course are: To remember the build of the human body. To provide students to acquire knowledge about the structure of the human body through systemic and topographic anatomy and in that way prepare them for understanding the normal and pathological human morphology, relation between surface shape and inner structures as well as the synthesis between the two as a part of the life cycle. Clinical importance of each region and spacial orientation within the human body. Thorough understanding of the systemic, functional and topographic anatomy of all regions, as well as functional anatomy of the locomotor system, cardiovascular, respiratory, digestive, urinary, reproductive, peripheral nerve including the main organization of the motor and sensory units. System anatomy: organ characteristics, their irrigation and

<table>
<tr><td></td><td>innervation. According to this approach the organs are grouped by their common function. General anatomical principles are accentuated in this approach for the understanding of the build and function of the human body.
Topographic anatomy: organ characteristics according to their placement in the body and interaction with nearby structures. All organs belong to a certain system and anatomical region.</td></tr>
<tr><td>Learning outcomes (general and specific competences):</td><td><u>General outcomes</u>
• Applying the independent learning through the study in the way of critical and self-critical questioning of scientific truth.
• Remembering the possession of personal qualities such as teamwork and personal contribution to it, attentiveness, active listening and positive team building.

<u>Specific outcomes</u>
• Applying the knowledge of: the human build, basic theoretic setting of the systemic and topographic anatomy, shape and build of the organs of each system, holotpic, skeletotopic and syntotopic relations of the organs regardless of the system they belong to.
• Applying the skills of anatomical dissection.
• Remembering the normal macromorphology of the human.
• Remembering and evaluation of the organ systems and regions of the human body.
• Remembering the details of all anatomical specimens.

The outcomes will be evaluated through continuous tests, active forms of studying during lectures and seminars, and in final exam.</td></tr>
<tr><td>Course content (Syllabus):</td><td>The Anatomy course consists of 38 units, everyday 10 minute test, continuous testing throughout the exercises, and three partial tests. Every thematic unit consists of 2-3 hours of lectures, 2-3 hours of seminars and 2-3 hours of exercises.</td></tr>
<tr><td>Format of instruction (mark in bold)</td><td>
<table>
<tr><td>Lectures</td><td>Exercises</td><td>Seminars</td><td>Independent assignments</td></tr>
<tr><td>Consultations</td><td>Work with mentor</td><td>Field work</td><td>Other</td></tr>
<tr><td colspan="4">Remarks: the class in each unit starts with a lecture, followed by seminars and exercises, completed by daily test. In seminars students analyze clinical examples and interactively evaluate previously learned material. During exercises students spend time in dissection hall alongside with assistants and demonstrators, as well as in computer room where they apply knowledge to complete computer stimulations. Assistants and demonstrators demonstrate the matter on</td></tr>
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	anatomical specimens so that students have an opportunity for active learning. At the end of each unit, students write a 10 minute test which may bring them extra point on the partial exam.
Student responsibilities	Students must attend the classes, it is allowed to miss out 20%of the classes. The final exam; daily 10 minute test; exercises in the computer room and dissection hall; making up for missed out seminars and exercises in a form of verbal questioning; attendance and active participation in class. The students will be graded according to: • Active participation during seminars and exercises • Daily 10 minute tests • Remembering and evaluation of anatomical specimens in the dissection hall

Screening student work (mark in bold)	Class attendance	Class participations	Seminar essay	Practical training
	Oral exam	**Written exam**	**Continuous assessment**	Essay

Detailed evaluation within a *European system of points*

STUDENTS RESPONSIBILITIES	**HOURS**	**PROPORTIONS OF ECTS CREDITS**	**PROPORTIONS OF MARK**
Class attendance and participations	30	1	0%
Seminar essay	90	3	20%
Written exam	240	8	50%
Oral exam	180	6	30%

Further clarification:
The exam consists of the written, practical and oral part.

Throughout the entire course a continuous examination is conducted via little 10 minute tests which enable students to achieve additional “bonus” points on partial exams.
The final exam in the Anatomy course consists of written, practical and oral examination. The student takes oral exam after a successful completion of an entire written exam (all three partial exams) and a practical part.
The written exam consists 50% of the grade, oral 30% and practical 20%.
During the course three partial exams will be organized. Successful passage of the partial tests will count as a written part of the exam.

According to the regulations of the study, final grade is obtained:
A = 90 to100% 5
B = 80 to 89% 4
C = 70 to 79% 3
D = 60 to 69% 2
F = 0 to 59% 1

Written part:
Total number of questions: 150 (150 minutes)
Total points: 150

Practical part:
The practical part consists of 25 anatomical specimens whose structures are marked and student is required to write the exact name in latin.
Bar: 80% (20 correct answers)

Verbal exam:
The exam card for the verbal part of the exam has 7 questions according to following regions:

1. Bones, joint and ligaments
2. Muscles and fascia
3. Central nervous system and senses
4. Organs
5. Peripheral and central nerves and autonomous nervous system
6. Blood and lymph vessels
7. Topography and regions

Required literature:	J. Fanghänel, F. Pera, F. Anderhuber, R. Nitsch: Waldeyerova anatomija čovjeka. Golden marketing, Zagreb, 2009. F. Netter: Atlas of Human Anatomy. Elsevier - Health Sciences Division, 2006.
Optional literature:	Jelena Krmpotić-Nemanić: Anatomija čovjeka, Medicinska naklada Zagreb, 1993. J. Sobotta. Atlas anatomije čovjeka, svezak I i II, Naklada Slap, 2007
Additional information about the course	Monitoring methods of teaching quality: • student questionnaire • analysis of the quality both by students and teachers • exam results analysis • report of the office for teaching quality • external evaluation (visit of team for quality control)

Annexes: calendar classes

The number of teaching units	**TOPICS AND LITERATURE**
I.	Title: Bones and joints of the trunk
	Short description: Course organization, anatomical terminology, introduction to osteology, types of joints. Vertebral column, ribs, sternum.
	Literature: required and optional

II.	Title: Bones and joints of the shoulder girdle and the upper limb
	Short description: Biomechanics and clinical significance of structure of bones and joints of the shoulder girdle and the upper limb.
	Literature:
III.	Title:Bones and joints of the upper limb – forearm and hand
	Short description: Biomechanics and clinical significance of structure of bones and joints of forearm and hand. Elbow joint and hand joints.
	Literature:
IV.	Title: Bones and joints of the lower limb – pelvis and hip
	Short description: Upright posture. Biomechanics and clinical significance of bones and joints of pelvis and lower limb. Pelvis and hip joint. Bones and joints of pelvis and thigh.
	Literature:
V.	Title: Bones and joints of the lower limb – knee and foot
	Short description: Biomechanics and clinical significance of bones and joints of lower leg and foot. Knee joint. Bones and joints of lower leg and foot.
	Literature:
VI.	Title: Neurocranium
	Short description: Neurocranium – evolutionary features and clinical significance. Points of orientation on the skull, skull as a whole, joints and sutures of the skull. Bones of the neurocranium, skull base, foramina and canals of the skull.
	Literature:
VII.	Title: Viscerocranium
	Short description: Viscerocranium – evolutionary features and clinical significance. Radiologic anatomy of the skeleton. Bones of viscerocranium, foramina and topographically significant facial regions.
	Literature:
VIII.	Title: Muscles of head and neck
	Short decription: Introduction to miology, shape, parts and insertions of the muscles. Facial muscles, mimics. Muscles of head and neck
	Literature:
IX.	Title: Muscles of thorax, back and shoulder girdle
	Short description: Clinical significance of morphology and structure of the thoracal, back and shoulder muscles. Particularities of structure of muscles of the shoulder girdle. Muscles of thorax, back and shoulders
	Literature:
X.	Title: Muscles of the upper limb
	Short description: Clinical significance of morphology and structure of the muscles of shoulder and arm. Muscles of the upper limb. Demonstrational dissection of muscles of the upper limb.
	Literature:
XI.	Title: Muscles of pelvis and thigh
	Short description: Clinical significance of morphology and structure of muscles of pelvis and thigh, human upright posture, walking. Internal and

	external pelvic muscles. Demonstrational dissection of muscles of pelvis and thigh.
	Literature:
XII.	Title: Muscles of lower leg and foot
	Short description: Clinical significance of morphology and structure of muscles of lower leg and foot. Muscles of lower leg and foot. Demonstrational dissection of muscles of lower leg and foot.
	Literature:
XIII.	Title: Heart and pulmonary circulation
	Short description: Morphology of heart, blood in pulmonary circulation, clinical significance of structure of blood vessels. Fetal circulation and its impact on structure and function of the cardiovascular system in adults. Heart dissection
	Literature:
XIV.	Title: Systemic circulation
	Short description: Systemic circulation, aorta, system of superior and inferior vena cava, lymphatic system. Clinical methods of blood vessels visualisation. Demonstrational excercises with models – blood vessels of body extremities
	Literature:
XV.	Title: Major divisoin of the nervous system, spinal cord and spinal nerves
	Short description: Organization of the nervous system and clinical significance of the spinal cord, vascularisation and pathways, reflex arc. Autonomic and somatic nervous system.
	Literature:
XVI.	Title: Brainstem and cerebellum
	Short description: Basic structure of brainstem and cerebellum. Fourth ventricle. Dissection of brainstem and cerebellum.
	Literature: required and optional
XVII.	Title: Mesencephalon, diencephalon and cranial nerves
	Short description: Basic structure of mesencephalon, diencephalon and cranial nerve. Dissection of mesencephalon and diencephalon, cranial nerve outlets
	Literature: required and optional
XVIII.	Title: Telencephalon
	Short description: Basic structure of telencephalon. Cortical centres of the brain, ventricular system. Limbic system. Dissection of telencephalon
	Literature: required and optional
XIX.	Title: Blood vessels of brain and spinal cord, cross-sections of the brain
	Short description: Blood vessels of the brain, brain membranes, venous sinuses, frontal and horizontal cross-sections of the brain. Characteristics of blood circulation in central nervous system.
	Literature: required and optional
XX.	Title: Carotid triangle
	Short description: Vagus nerve, truncus sympathicus, accessory nerve. Topographic anatomy (carotid triangle, common carotid artery, internal jugular vein)

	Literature: required and optional
XXI.	Title: Lateral cervical region
	Short description: Subclavian artery and vein, cervical plexus, brachial plexus. Topographic anatomy of the lateral cervical region.
	Literature: required and optional
XXII.	Title: Orbit
	Short description: Palpebral region. Innervation and vascularisation of the orbit. Orbit and its contents, eye globe.
	Literature: required and optional
XXIII.	Title: Temporal bone
	Short description: Temporal bone and tympanic cavity. Topographic anatomy of middle and inner ear.
	Literature: required and optional
XXIV.	Title: Parotideomasseteric region and temporomandibular joint
	Short description: Parotideomasseteric region, salivatory glands, temporomandibular joint, anterior facial region. Facial nerve, tympanic nerve, otic ganglion, retromandibular fossa. Mastication muscles, anatomical background of chewing, infratemporal fossa.
	Literature: required and optional
XXV.	Title: Oral cavity
	Short description: Hypoglossal nerve, glossopharingeal nerve, submandibular ganglion. Teeth, tongue, muscles of oral cavity, mandibular nerve, hard and soft palate.
	Literature: required and optional
XXVI.	Title: Pharynx
	Short description: Pharynx and parapharingeal space. Clinical significance of structure of the pharynx. Vagal nerve, glossopharyngeal nerve, pharyngeal isthmus, pharyngeal lymph tissue
	Literature: required and optional
XXVII.	Title: Nose and paranasal sinuses
	Short description: Nose and paranasal sinuses, anterior facial region, pterygopalatine ganglion, maxillary nerve, innervation and vascularization of nose and paranasal sinuses. Topographic anatomy of nose and nasal cavity.
	Literature: required and optional
XXVIII.	Title: Topographic anatomy of abdomen I
	Short description: Abdominal regions, topographic anatomy of esophagus, stomach and small intestine. Clinical significance of esophagus, stomach and small intestine structure.
	Literature: required and optional
XXIX.	Title: Topographic anatomy of abdomen II
	Short description: Topographic anatomy of colon, liver, pancreas and spleen. Peritoneum development. Surface projection of abdominal organs.
	Literature: required and optional
XXX.	Title: Topographic anatomy of retroperitoneum
	Short description: Kidney, kidney membranes, ureter, bladder. Inguinal canal.

	Topographic anatomy of retroperitoneum.
	Literature: required and optional
XXXI.	Title: Topographic anatomy of upper limb I
	Short description: Topographic anatomy of shoulder and upper arm. Clinical significance of shoulder and upper arm topography. Axillary fossa, upper arm and cubital fossa.
	Literature: required and optional
XXXII.	Title: Topographic anatomy of upper limb II
	Short description: Topographic anatomy of forearm and hand. Clinical significance of forearm and hand topography. Forearm and hand.
	Literature: required and optional
XXXIII.	Title: Larynx, trachea and bronchi
	Short description: Larynx, trachea and bronchi (pectoral region, mamma). Clinical significance of the voicebox build for fonation and the intersection of the respiratory and digestive system. Jugular fossa, median neck region (laryngea, thyroidea, trachealis).
	Literature: required and optional
XXXIV.	Title: Lungs and mediastinum
	Short description: Topographic anatomy of the lungs and sufrace projectionsto the thoracic wall. Clinical significance of the lung anatomy and topographic relations in the chest. Lungs and pleura, mediastinum.
	Literature: required and optional
XXXV.	Title: Topgraphic anatomy of the male pelvic floor
	Short description: Topgraphic anatomy of the male pelvic floor.Clinical significance of the male reproductive organs – hernia of the ingunial region. Scrotum, testis and spermatic funiculus, inguinal canal.
	Literature: required and optional
XXXVI.	Title: Topgraphic anatomy of the female pelvic floor.
	Short description: Topgraphic anatomy of the female pelvic floor. Clinical significance of the female reproductive organs. The location of the uterus, uterine ligaments, and the location of ovaries. Pelvic diaphragm.
	Literature: required and optional
XXXVII.	Title: Topographic anatomy of the lower limb I.
	Short description: Topographic anatomy of the gluteal region and upper leg. Clinical significance of the topographic relations regarding femoral trigonum and adductor canal. Gluteal region and upper leg.
	Literature: required and optional
XXXVIII.	Title: Topographic anatomy of the lower limb II.
	Short description: Topographic anatomy of the lower leg and the foot. Clinical significance in the topographic relation inside poplietal fossa. Lower leg and the foot.
	Literature: required and optional