Course description

Part 1

<table>
<tr><th colspan="4">General information about the course</th></tr>
<tr><td colspan="2">1. Major of study: Physiotherapy
2. Study profile: General academic</td><td colspan="2">3. Study level: unified MSc
4. Form of study: intramural
5. Cycle of study: 2026-2031</td></tr>
<tr><td colspan="2">6. Year: I</td><td colspan="2">7. Semester: I and II</td></tr>
<tr><td colspan="4">8. Course name: Anatomy</td></tr>
<tr><td colspan="4">9. Course status: obligatory</td></tr>
<tr><td colspan="4">10. Course contents

To familiarise students with the anatomical structure of the human body and basic relations between its structure and function in conditions of health and disease, in particular, the locomotor system.
To learn the types of imaging methods, principles of their performance and their diagnostic value (X-ray, ultrasound, computed tomography, magnetic resonance imaging).
Knowing the anatomical terminology necessary to describe health allows one to recognise and locate the basic structures of the human body on phantoms and anatomical models, including elements of the musculoskeletal system, such as elements of the osteoarticular system, muscle groups, and individual muscles.
To localise through palpation some selected elements of the anatomical structure and their relation with adjacent structures, including bone elements that are the sites of muscle and ligament insertions, anthropometric points, the superficial muscles and tendons and selected neurovascular bundles

Learning outcomes/reference to learning outcomes indicated in the standards
For knowledge – student knows and understands: A.W.1, A.W.2, A.W.3
For skills students can do: A.U.1, A.U.2
For social skills student is ready for K.K.5, OK.K.6</td></tr>
<tr><td colspan="2">11. Number of hours for the course (in contact with the teacher/including communication hours/self-learning)</td><td>112/-/63</td><td>12. Number of ECTS points for the course</td><td>7</td></tr>
<tr><td colspan="4">13. The form of the course evaluation: exam</td></tr>
<tr><td colspan="4">14. Methods of verification and evaluation of learning outcomes</td></tr>
<tr><td>Learning outcomes</td><td colspan="2">Methods of verification</td><td>Methods of evaluation*</td></tr>
<tr><td>Knowledge</td><td colspan="2">Final exam – MCQ test</td><td>*</td></tr>
<tr><td>Skills</td><td colspan="2">Practical exam</td><td>*</td></tr>
<tr><td>Competencies</td><td colspan="2">Observation</td><td>*</td></tr>
</table>

* The following evaluation system has been assumed:

Very good (5,0) – the assumed learning outcomes have been achieved and significantly exceed the required level
Better than good (4,5) – the assumed learning outcomes have been achieved and slightly exceed the required level
Good (4,0) – the assumed learning outcomes have been achieved at the required level
Better than satisfactory (3,5) – the assumed learning outcomes have been achieved at the average level
Satisfactory (3,0) – the assumed learning outcomes have been achieved at the minimum required level
Unsatisfactory (2,0) – the assumed learning outcomes have not been achieved

Course description

Part 2

Other useful information about the course	
15. Name of Department, mailing address, e-mail: Anatomy Department, Health Science Department in Katowice Medical University of Silesia in Katowice**,** Medyków Street 18, 40 - 752 Katowice, tel +48 32 208 88 44, http://anatom.wnoz.sum.edu.pl/	
16. Name of the course coordinator: Renata Wilk MSc, PhD	
17. Prerequisites for knowledge, skills and other competencies: Anatomy knowledge at the high school level	

18. Number of students in groups	Following the Senate Resolution
19. Study materials/didactic methods	SUM e-learning platform, anatomical models, classic and multimedia anatomical atlases, human anatomical specimens, and Atlases of radiological anatomy. Radiographic images on the plane and digitised radiographs. Settees for palpation anatomy classes.
20. Location of classes	Lab rooms of the Anatomy Department, School of Health Science, Medical University of Silesia in Katowice, ground floor, rooms 3 and 4, Lecture Hall A1 Forensic Medicine Department, School of Medicine, Medical University of Silesia in Katowice, Medyków Street 18, 40 - 752 Katowice
21. Location and time for contact hours	Monday from 12 p.m. to 2 p.m. Anatomy Department, Health Science Department in Katowice Medical University of Silesia in Katowice**,** Medyków Street 18, 40 - 752 Katowice, 6th floor, room 621

22. Learning outcomes

Number of the course learning outcome	Course learning outcomes	Reference to the learning outcomes indicated in the standards
C_K01	The student knows the anatomical structures of the human body systems to the extent necessary for physiotherapeutic practice. Understands the basic relationships between their structure and function in health and disease, with emphasis on the musculoskeletal system.	A.W.1
C_K02	The student knows types of imaging methods, understands the principles of their implementation and diagnostic value (X-ray images, ultrasound, CT, and MR), with emphasis on the musculoskeletal system.	A.W.2
C_K03	The student knows the correct anatomical terminology in English necessary to describe the state of health.	A.W.3

C_S01	The student can recognise and locate them on the phantoms, models and anatomical specimens, as well as correctly name the basic structures of the human body, including elements of the musculoskeletal system, such as elements of the osteoarticular system, muscle groups, and individual muscles.	A.U.1
C_S02	The student can recognise, through palpation, selected elements of anatomical structures and associate them with adjacent structures, including bone elements that are the insertion points for muscles and ligaments, anthropometric points, superficial muscles and tendons, and neurovascular bundles.	A.U.2
C_C01	The student recognises his/her own limitations and self-assesses deficits and educational needs.	OK.K5
C_C02	The student uses objective sources of information	OK.K6

23. Teaching methods: lecture, exposition, discussion, problem-based learning, prosectory classes, working cards, practical classes for palpation anatomy

24. Forms and topics of classes**	**Number of hours (contact hours)**
24.1. Lectures	**52**
The general structure of the skeletal system and types of joints. Structure of the joint.	**2**
Axial skeleton: construction of a typical vertebra, vertebral column and its connection. Skeleton of Thorax: Ribs and Sternum, Joint in the Thorax.	**2**
Skeleton of the upper limb. Skeleton of the shoulder girdle. The skeleton of the free part of the upper limb. Joints of the upper limb. Lower limb skeleton.	**3**
Skeleton of the Pelvic girdle. Skeleton of the free part of the lower limb. Joints of the lower limb.	**3**
Skull. General structure. Viscerocranium bones. Neurocranium bones. Joints of the skull. Anthropometric points of the skull.	**3**
Upper limb topography: muscles, vessels, nerves, and topographic points. Upper limb palpation techniques basics.	**3**
Lower limb topography: muscles, vessels, nerves, and topographic points. Lower limb palpation techniques basics.	**3**
Muscles of the Thorax, Back, Abdomen and Pelvis, attachments (origin and insertions), fascias, action, vascularisation, and innervation of the muscles. Points of the minor resistance of the abdominal wall, mechanisms of hernia formation. The palpation Anatomy Basics for the Back, Thorax and Pelvis.	**3**
Diagnostic imaging usage for the examination of the musculoskeletal system. X-ray, CT, MR, and ultrasound images of the motion system.	**3**
Topography of the Thorax: Areas and topographic lines of the Thorax. Thoracic walls revision. Lungs and pleura. Systemic and nutritional supply of the lungs (arteries and veins). Innervation of the lungs. Respiration mechanics.	**3**

Topography of the Thorax: Detailed structure of the heart, arterial supply and venous drainage of the heart, and innervation of the heart. Fetal circulation. General scheme of arterial supply and venous drainage of the whole body. Mediastinal division and contents. Oesophagus, trachea, bronchi, phrenic and vagus nerves.	**3**
Abdominal cavity: abdominal walls. Topography of the supracolic and infracolic abdominal organs.	**3**
Retroperitoneal space – limitations and contents. Organs, vessels and nerves of the retroperitoneal space. Pelvic cavity: pelvic floor muscles, pelvic organs, structure, arterial supply and venous drainage of the organs, innervation of the organs.	**3**
Diagnostic imaging methods used in the Thorax, Abdomen and Pelvis organs: X-ray, CT, MR, and ultrasound images of the motion system.	**3**
Head: facial expression muscles, masticatory muscles. Neck: neck muscles, Innervation, arterial supply and venous drainage of the head and neck muscles. NC VII, NC XI. Cervical plexus. Oral cavity, nasal cavity, structure, arterial supply, venous drainage, and innervation. NC V1, NC V2, NC V3, NC IX, NC X, NC XII.	**3**
Organs of the special senses: eye and ear. Location, structure, arterial supply, venous drainage, and innervation. Cranial nerves: NC I, NC II, NC III, NC IV, NC V1, NC VIII. Larynx: location and structure. Pharynx: location and structure. Arterial supply and venous drainage, innervation of the larynx and pharynx.	**3**
Central nervous system: division and general structure. Spinal cord. Arterial supply and venous drainage of the CNS.	**3**
Imaging methods used in the diagnosis of the skull, head and central nervous system. X-ray, CT, and MR images of the Central Nervous System.	**3**
24.2. Seminars	**0**
24.3. Labs	**60**
Basics of anatomy. Anatomical terminology. Anatomic position. The general structure of the human body. Axes and planes of the body. Areas and topographical lines of the body. The general structure of bones and joints. The general structure of the synovial joint, the basic and accessory elements of the joint, and the structure of the joint capsule. Classifications of joints. Joint mechanics, types of movements. Axial skeleton - the vertebral column. Characteristic features of the typical vertebrae come from particular parts of the vertebral column. Primary and secondary curvature of the vertebral column. Joints of the vertebral column. Palpation of anatomical elements of the vertebral column. Skeleton of Thorax. Structure and divisions of the ribs and sternum. Joints of the ribs and sternum. Joints of the Ribs and vertebral column. The upper and lower apertures of the Thorax. Palpation of anatomical elements of the Thorax.	**3**
Skeleton of the upper limb. Upper limb skeleton. Bones of the upper limb girdle. Joints of the upper limb girdle: sternoclavicular and acromioclavicular joints. Humerus features. Joints of the free part of the upper limb. Shoulder joint: articular surfaces, accessories and ligaments of the joint. Shoulder joint mechanics, type of the joint and range of motion. Radius and ulna - detailed structure, hand bones (carpal, metacarpal bones, and phalanges). Elbow joint: (shoulder and elbow joint, humeroradial, humeroulnar joint, radioulnar proximal joint), articular surfaces, additional joint elements, ligaments of the joints. Forearm bone connections. Joints and ligaments of the hand (wrist, metacarpus and phalanges). The radioulnar distal joint, radiocarpal	**3**

joint, Wrist and hand joints: articular surfaces, ligaments of the joints. Functional and clinical anatomy of the upper limb bones and joints. Palpation of the bony elements of the upper limb. Upper limb joint mechanics, types of joints and the ranges of motion.	
Lower limb skeleton. Pelvic girdle: pelvic bone, pelvic ligaments. Pelvis as a whole structure; pelvic planes and dimensions. Pelvic joints: pubic symphysis, sacroiliac joint. Bones of the free part of the lower limb: femur - detailed structure. Patella. Hip joint: articular surfaces, additional joint elements, and ligaments of the joint. Bones of the free part of the lower limb: tibia, fibula: detailed structure. Knee joint: articular surfaces, accessory joint elements and ligaments of the joint. Tarsal bones, metatarsal bones and phalanges. Tibiofibular joint, tibiofibular syndesmosis: structure and ligaments of the joint. Ankle joint: articular surfaces, additional joint elements, and ligaments of the joint. Foot joints: articular surfaces and ligaments of the joint. Functional and clinical anatomy of the lower limb skeleton. Palpation of the lower limb bone elements. Lower limb joint mechanics, types and ranges of motion.	**3**
Skull. Topographic anatomy of the skull. Joint types of the skull: Sutures, synchondroses, atlantooccipital joint. Anthropometric points. The external and internal bases of the skull. Skull fossa: anterior, middle and posterior. Cavities and fossae of the skull. Functional and clinical anatomy of the skull. Differences in the structure of the skull related to age and sex, such as the fontanelle.	**3**
General muscle structure. Areas of the upper limb. Topographic and functional anatomy of the shoulder girdle and arm: muscles and fascia of the shoulder girdle: direction and function. Axillary Fossa and cavity. Arm muscles and fascias: origins, insertions and movements.	**3**
Topographic and functional anatomy of the forearm and hand: muscles and fascia of the forearm and hand: insertions and movements, cubital fossa, carpal tunnel, tendon sheaths, tendon crossing. Brachial plexus - location and structure. Arteries and veins of the upper limb. Upper limb palpation anatomy. Clinical anatomy of the upper limb.	**3**
Functional and topographic anatomy of the lower limb girdle: muscles, vessels and nerves of the pelvic girdle. Lumbar and sacral plexus: structure, location and range of supply. Topographic and functional anatomy of the free part of the lower limb: muscles and fascia of the thigh. Femoral canal. Femoral triangle. Adductor canal. Functional and topographic anatomy of the leg and foot. Popliteal fossa. Lateral malleolar canal, medial malleolar canal. Retinaculas. Arteries and veins of the lower limb. Lower limb palpation anatomy. Clinical anatomy of the lower limb.	**3**
Topographic anatomy of the Thorax and Back walls: muscles and fascia (the intrinsic and extrinsic muscles of the Thorax, intrinsic and extrinsic muscles of the Back): origins, insertions and movements. Diaphragm: origins, insertions and movements. The innervation and vascular supply of the muscles of the Thorax and Back. Palpation of the Thorax and Back walls elements. Radiological and clinical anatomy of the Thorax and Back walls. Functional and topographic anatomy of the Abdominal walls. Muscles and fascia of the Abdominal wall: insertions and movements. The innervation and vascular supply of the Abdominal muscles. Places of minor resistance in the Abdominal wall. Inguinal canal. Functional and topographic anatomy of the Pelvic walls. Muscles and fascia of the Pelvic walls: origins, insertions and movements. Pelvic floor muscles and fascia: origins, insertions and movements. The innervation and vascular supply of the muscles of the Pelvic walls and floor. Palpation of the Abdominal walls, pelvic walls, and floor.	**3**
Radiological anatomy of the spine. Radiological anatomy of the bones of the upper and lower limb - Radiological anatomy of the skull. Radiological anatomy of the upper limb and lower limb. Radiological anatomy of the walls of the chest, abdomen and pelvis. X-rays, computed	**3**

tomography and magnetic resonance imaging of the musculoskeletal system. Basics of methodology of various imaging techniques of the musculoskeletal system.	
Practical credit of the first semester.	**3**
Organs of the Thorax. Thoracic walls structure revision. Breast structure: location, suspensory elements, vascularization and nerve supply of the breast, Lymphatic drainage of the Breast. Pleura. Pleural cavity: parietal and visceral pleura, division of the parietal pleura. Innervation and vascular supply of the pleura. Lungs: location, external structure. Bronchi. Bronchial tree division, Lung lobes and segment structure, vascular supply and innervation. Mediastinum: boundaries, division, content. Heart: topography of the heart, external structure of the heart, internal structure of the heart, conductive system and innervation of the heart, pericardium, coronary vessels, and heart veins. Branches of the aortic arch. Branches of the descending aorta: thoracic and abdominal. Superior Vena Cava, Inferior Vena Cava, topography, and tributaries. General schema of the arterial and venous supply of the shoulder girdle, pelvic girdle and the free part of the upper and lower limbs, revision. General schema of arterial supply and venous drainage of the Thorax, Back and Abdomen, revision.	**3**
Abdomen. Revision of abdominal wall structure. The structure and function of the peritoneum, lesser omentum, greater omentum, peritoneal recesses, peritoneal cavity, and retroperitoneal space. The supracolic part of the abdominal cavity. Stomach, Liver, Pancreas, Spleen: location, suspensory elements and their relation to the peritoneum. The infracolic part of the Abdomen. Small intestine, Large intestine: location and their relation to the peritoneum. The portal system, vascular supply and innervation of the gastrointestinal tract and glands. Portal-systemic anastomoses. Remnants of the fetal circulation. Retroperitoneal organs: kidney structure: location, suspensory elements, innervation and vascular supply of the kidneys, and ureters. Radiological and clinical abdominal anatomy.	**3**
Pelvic floor muscles - revision of material. Pelvic diaphragm. Urogenital diaphragm. Topography of the pelvic floor. Male and female external genital muscles. True Pelvis organs: bladder and rectum: location, suspensory elements, arterial supply and venous drainage, innervation. Internal female genitalia: location, suspensory elements, innervation, arterial supply and venous drainage. Internal male genital organs: location, suspensory elements, innervation, arterial supply and venous drainage. Male external genitalia: structure, arterial supply and venous drainage, innervation. Male urethra. External genitalia female structure, vascular supply and innervation. Female urethra. Autonomic plexuses of the pelvic cavity. Basics of radiological anatomy of the thorax, abdomen and pelvis.	**3**
Head: Head muscles: facial expression muscles: division and innervation, mastication muscles: insertions and movements. Cranial nerves: NC VII, NC V3. Neck: Neck muscles: Superficial, suprahyoid, infrahyoid, deep muscles of the neck: origins, insertions and movements. Vascular supply and innervation. Topography of the neck. Triangles of the neck. Cervical Plexus, CN XI. External Nose. Nasal cavity - structure, vascular supply and innervation, CN I. Oral cavity - structure, vascular supply and innervation. Salivary glands. CN V, CN VII, CN IX, CN XII.	**3**
Head: Sensory organs. EYE: structure, vascular supply and innervation, optic nerve (CN II), muscles of the eye movement (CN III, IV, VI). EAR: division and structure, vascular supply and innervation, CN VIII. Pharynx: position, pharyngeal muscles, parts of the pharynx, vascular supply and innervation. Larynx position and suspensory elements, structure, laryngeal muscles, vascular supply and innervation of CN X. Arterial and venous vascularisation of the head. Cervical plexus. Range of innervation and location. Head and neck palpation anatomy. Division and development of the nervous system. The structure of the Forebrain - division, grey and white matter of the Forebrain. Cortical functional areas. Symptoms of cortical areas injury. Basal nuclei. Function of basal nuclei in the motoric system. Hippocampus.	**3**

Diencephalon: division (thalamus, hypothalamus, subthalamus, epithalamus) structure and function of Thalamus, Hypothalamus - structure and function.	
Midbrain - white and grey matter, reticular formation, substantia nigra, red nucleus; Rhombencephalon: Pons and Cerebellum; Structure and function of the Cerebellum, signs of the injury. Hindbrain, Medulla oblongata - structure and function. Ventricular system - main parts. Cerebrospinal fluid circulation. Spinal cord - external and internal structure. Miotatic reflexes. Spinal cord pathways (general information + symptoms of injury). Ascending pathways: dorsal column pathways, spino-cerebellar pathways, and spinothalamic pathways. Descending pathways: corticospinal pathway. Spinal internal pathways, the dorsolateral pathway. Extrapyramidal system. Limbic system. Radiological and clinical anatomy of the head and central nervous system.	**3**
Palpation of the bones and muscles of the upper limb. Anatomy of upper limb structures on a live human.	**3**
Palpation of the bones and muscles of the lower limb. Anatomy of lower-limb structures in a live human.	**3**
Palpation of the bones and muscles of the thorax, back and abdomen. Anatomy of the Thorax, Abdomen and Pelvis organs on a live human.	**3**
Practical credit of the second semester.	**3**
24.4. Clinical Labs	**-**
24.5. Practical classes	**-**
24.6. Low reality simulation classes	**-**
24.7. High reality simulation classes	**-**
24.8. Self-learning*	**63**
25. ECTS points number**	**7**

ACTIVITY	**NUMBER OF HOURS/ STUDENT WORK LOAD**
Number of hours with the teacher according to the plan (contact hours)	**112**
Preparation for the different forms of the classes	**0**
Consultation hours attendance	**0**
Time required for the project realisation /documentation/self-learning	**0**
Self-learning**	**63**
Preparation for the exam	**0**
Attendance in the exam	**0**
Practical classes	**0**
Clerckships	**0**
NUMBER OF HOURS	**7**
SUMMARISE THE NUMBER OF ECTS POINTS	**7**

26. Readings

1. Gray's Basic Anatomy for Students, 1st edition, by Richard L. Drake, A. Wayne Vogl, and Adam W. M. Mitchell; Elsevier 2013;
2. Gray's Atlas of Anatomy, 2nd edition, by Richard L. Drake, A. Wayne Vogl, and Adam W.M. Mitchell; Elsevier 2015;
3. Netter's Atlas of Human Anatomy, 6th edition, Frank H. Netter; Elsevier 2014;
4. Atlas of radiologic anatomy, 7th edition, Lothar Wicke; Saunders 2004;

5. Field's palpation anatomy & surface markings, 5th edition, Derek Field, Jane Owen Hutchinson; Churchill Livingstone 2012;
Additional:
1. Netter's Concise Neuroanatomy - Updated edition, 1st edition by Michael Rubin and Joseph E. Safdieh; Elsevier 2017;
2. Atlas of Anatomy, 3rd edition, by Anne M Gilroy, Brian R MacPherson, Michael Schuenke, Erik Schulte, Udo Schumacher; Thieme 2016;

27. Detail evaluation criteria	
Following the recommendations of the inspection bodies Completion of the course – student has achieved the assumed learning outcomes Detail criteria for completion and evaluation of the course are specified in the course regulations	

* If required by the standard, the self-learning subject should be given by the teacher

** Fill in according to the Board/ Program Committee for the course and granted by the Dean