



## Clinical Anatomy – optional course

### 1. IMPRINT

|                                                              |                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Academic Year</b>                                         | 2026/2027                                                                                                                                                                                                                                            |
| <b>Department</b>                                            | Faculty of Medicine                                                                                                                                                                                                                                  |
| <b>Field of study</b>                                        | Medicine                                                                                                                                                                                                                                             |
| <b>Main scientific discipline</b>                            | Medical sciences                                                                                                                                                                                                                                     |
| <b>Study Profile</b>                                         | General academic                                                                                                                                                                                                                                     |
| <b>Level of studies</b>                                      | Uniform MSc                                                                                                                                                                                                                                          |
| <b>Form of studies</b>                                       | Full time studies                                                                                                                                                                                                                                    |
| <b>Type of module / course</b>                               | Non-compulsory                                                                                                                                                                                                                                       |
| <b>Form of verification of learning outcomes</b>             | completion                                                                                                                                                                                                                                           |
| <b>Educational Unit / Educational Units</b>                  | DEPARTMENT OF DESCRIPTIVE AND CLINICAL ANATOMY<br>CENTER OF BIOSTRUCTURE RESEARCH<br>Warszawa, ul. Chałubińskiego 5, tel./fax 629-52-83<br>e-mail : <a href="mailto:anatomy@wum.edu.pl">anatomy@wum.edu.pl</a>                                       |
| <b>Head of Educational Unit / Heads of Educational Units</b> | Prof. Bogdan Cizek, MD, PhD                                                                                                                                                                                                                          |
| <b>Course coordinator</b>                                    | <b>Tymon Skadorwa, MD, PhD</b><br>DEPARTMENT OF DESCRIPTIVE AND CLINICAL ANATOMY<br>CENTER OF BIOSTRUCTURE RESEARCH<br>Warszawa, ul. Chałubińskiego 5, tel./fax 629-52-83<br>e-mail : <a href="mailto:tskadorwa@wum.edu.pl">tskadorwa@wum.edu.pl</a> |
| <b>Person responsible for syllabus</b>                       | <b>Tymon Skadorwa, MD, PhD</b><br>DEPARTMENT OF DESCRIPTIVE AND CLINICAL ANATOMY<br>CENTER OF BIOSTRUCTURE RESEARCH<br>Warszawa, ul. Chałubińskiego 5, tel./fax 629-52-83<br>e-mail : <a href="mailto:tskadorwa@wum.edu.pl">tskadorwa@wum.edu.pl</a> |
| <b>Teachers</b>                                              | Assoc Prof. Tymon Skadorwa, MD, PhD<br>Dr. Maciej Ciołkowski, MD, PhD<br>Dr. Robert Franczyk, MD PhD<br>Dr. Arkadiusz Kowalczyk, MD<br>Mr. Michał Grzegorzczak, PhD                                                                                  |

|  |                                                                                      |
|--|--------------------------------------------------------------------------------------|
|  | Mr. Krzysztof Dąbrowski, PhD<br>Dr. Olga Wierzbieniec, MD<br>Dr. Kamila Sońnicka, MD |
|--|--------------------------------------------------------------------------------------|

## 2. BASIC INFORMATION

|                                         |                                                                                                                      |                        |                          |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|
| Year and semester of studies            | Year 1, Semester 1 part one (winter) seminar 30h, 2 ECTS<br>Year 1, Semester 2 part two (summer) seminar 30h, 2 ECTS | Number of ECTS credits | 4.00                     |
| FORMS OF CLASSES                        |                                                                                                                      | Number of hours        | ECTS credits calculation |
| Contacting hours with academic teacher  |                                                                                                                      |                        |                          |
| Lecture (L)                             |                                                                                                                      |                        |                          |
| Seminar (S)                             |                                                                                                                      | 60                     | 2.40                     |
| Classes (C)                             |                                                                                                                      |                        |                          |
| e-learning (e-L)                        |                                                                                                                      |                        |                          |
| Practical classes (PC)                  |                                                                                                                      |                        |                          |
| Work placement (WP)                     |                                                                                                                      |                        |                          |
| Unassisted student's work               |                                                                                                                      |                        |                          |
| Preparation for classes and completions |                                                                                                                      | 40                     | 1.60                     |

## 3. COURSE OBJECTIVES

|    |                                                                                                                                                                                         |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| O1 | To acquire the knowledge about the construction and usage of anatomical terminology according to the internationally accepted "Terminologia Anatomica".                                 |
| O2 | To be able to name and describe all the anatomical structures dissected during the laboratory classes, understand their development as well as topographical relations.                 |
| O3 | To understand the relationship between the structure and function of tissues, organs and systems of the human body.                                                                     |
| O4 | To be able to recognize the anatomical structures in images acquired using various imaging modalities (computed tomography, magnetic resonance imaging, ultrasound imaging, endoscopy). |
| O5 | To understand the principles of biomechanics (movements of joints, function of muscles).                                                                                                |
| O6 | To describe anatomical background of central and peripheral nervous system damage.                                                                                                      |
| O7 | To know the spatial, topographical relationships between organs.                                                                                                                        |
| O8 | To know the surface projections of the organs (e.g. projection of the cardiac valves on the surface of the chest)                                                                       |
| O9 | To differentiate the normal conditions from pathology basing on post mortem and in vivo methods.                                                                                        |

#### 4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING

|                                                                                           |                                                                                                                                                                |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Code and number of the effect of learning in accordance with standards of learning</b> | <b>Effects in the field of:</b> <i>(in accordance with appendix to the Regulation of Minister of Science and Higher education from 29th of September 2023)</i> |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|

##### Knowledge – Graduate\* knows and understands:

|      |                                                                                                                                                                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A.W1 | structure of the human body in the topographical approach (upper and lower limb, chest, abdomen, pelvis, back, neck, head) and the functional approach (skeletal system, muscular system, urinary system, reproductive system, nervous system and sensory system, integumentary system); appropriate Polish and English anatomical, histological and embryological terminology; |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

##### Skills– Graduate\* is able to:

|      |                                                                                                                                    |
|------|------------------------------------------------------------------------------------------------------------------------------------|
| A.U3 | explain the anatomical basis of the physical examination;                                                                          |
| A.U4 | infer the relationships between anatomical structures on the basis of in vivo diagnostic examinations, in particular in radiology; |

\* In appendix to the Regulation of Minister of Science and Higher education from 29th of September 2023, graduate", not student is mentioned.

#### 5. ADDITIONAL EFFECTS OF LEARNING *(non-compulsory)*

|                                     |                                  |
|-------------------------------------|----------------------------------|
| <b>Number of effect of learning</b> | <b>Effects in the fields of:</b> |
|-------------------------------------|----------------------------------|

##### Knowledge – Graduate knows and understands:

|    |                                                                                       |
|----|---------------------------------------------------------------------------------------|
| K1 | Palpation sites of arterial pulse, nerves, internal organs, muscles, bones and joints |
| K2 | Principles of anatomical research methodology                                         |

##### Skills– Graduate is able to:

|    |                                                                                                                                                                         |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S1 | Understand and use images of anatomical structures obtained from anatomical dissections, medical imaging modalities, as well as medical and anatomical iconography      |
| S2 | Analyse biomechanics of the joints                                                                                                                                      |
| S3 | Recognize pulse palpation sites, palpation sites of major nerve trunks and typical osseous points                                                                       |
| S4 | Recognize basic anatomical structures essential for the medical practitioner in specimens and models (see basic points list) in at least 90%                            |
| S5 | Recognize the remaining anatomical structures in specimens, models, medical images (sonography, X-ray, computed tomography, magnetic resonance imaging) in at least 65% |
| S6 | Design a simple scientific research study in anatomy                                                                                                                    |

##### Social Competencies – Graduate is ready for:

|     |                                                                                                           |
|-----|-----------------------------------------------------------------------------------------------------------|
| SC1 | Show respect for the human body (corpse), social groups, religious feelings for the sake of their welfare |
| SC2 | Further self-education with medical confidentiality                                                       |

| 6. CLASSES            |                                                                         |                     |
|-----------------------|-------------------------------------------------------------------------|---------------------|
| Form of class         | Class contents                                                          | Effects of Learning |
| <b>Seminars 1-23</b>  | <b>WINTER SEMESTER</b>                                                  |                     |
| S1 – Seminar 1        | Axial skeleton, Vertebrae, Ribs.                                        | A.W1, A.U3, AU4     |
| S2 – Seminar 2        | Upper extremity.                                                        | A.W1, A.U3, AU4     |
| S3 – Seminar 3        | Lower extremity.                                                        | A.W1, A.U3, AU4     |
| S4 – Seminar 4        | Bones of the skull 1.                                                   | A.W1, A.U3, AU4     |
| S5 – Seminar 5        | Bones of the skull 2.                                                   | A.W1, A.U3, AU4     |
| S6 – Seminar 6        | Joints, fossae, canals and spaces of the skull.                         | A.W1, A.U3, AU4     |
| S7 – Seminar 7        | Radiology in osteology. Repetition.                                     | A.W1, A.U3, AU4     |
| S8 – Seminar 8        | Introduction. Spinal cord. Spinal nerve.                                | A.W1, A.U3, AU4     |
| S9 – Seminar 9        | Cerebral hemisphere.                                                    | A.W1, A.U3, AU4     |
| S10 – Seminar 10      | Diencephalon. Lateral and third ventricles.                             | A.W1, A.U3, AU4     |
| S11 – Seminar 11      | Brainstem, cerebellum. Fourth ventricle. Roots of cranial nerves.       | A.W1, A.U3, AU4     |
| S12 – Seminar 12      | Cross-sections of the CNS.                                              | A.W1, A.U3, AU4     |
| S13 – Seminar 13      | Vascular anatomy of the CNS.                                            | A.W1, A.U3, AU4     |
| S14 – Seminar 14      | Identification of elements of the CNS pathways.                         | A.W1, A.U3, AU4     |
| S15 – Seminar 15      | Radiologic anatomy of the CNS.                                          | A.W1, A.U3, AU4     |
| S16 – Seminar 16      | Skin. Neck: triangles, fascias, veins. Cervical plexus.                 | A.W1, A.U3, AU4     |
| S17 – Seminar 17      | Neck: muscles. Thyroid gland, parathyroids. CCA.                        | A.W1, A.U3, AU4     |
| S18 – Seminar 18      | Larynx, trachea. ECA. Vagus, accessory nerve. Sympathetic trunk.        | A.W1, A.U3, AU4     |
| S19 – Seminar 19      | Muscles of face. Facial nerve and artery. Parotid gland.                | A.W1, A.U3, AU4     |
| S20 – Seminar 20      | Oral cavity, teeth, gums, tongue, palate. Hypoglossal nerve.            | A.W1, A.U3, AU4     |
| S21 – Seminar 21      | Infratemporal fossa. Nasal cavity. Trigeminal nerve.                    | A.W1, A.U3, AU4     |
| S22 – Seminar 22      | Orbit, eye. Dura mater. Dural sinuses.                                  | A.W1, A.U3, AU4     |
| S23 – Seminar 23      | Ear. Hearing organ. Temporal bone. Radiologic anatomy of Head and Neck. | A.W1, A.U3, AU4     |
| <b>Seminars 24-47</b> | <b>SUMMER SEMESTER</b>                                                  |                     |
| S24 – Seminar 24      | Back.                                                                   | A.W1, A.U3, AU4     |
| S25 – Seminar 25      | Thoracic wall. Breast.                                                  | A.W1, A.U3, AU4     |
| S26 – Seminar 26      | Thoracic cavity.                                                        | A.W1, A.U3, AU4     |
| S27 – Seminar 27      | Respiratory system.                                                     | A.W1, A.U3, AU4     |
| S28 – Seminar 28      | Heart.                                                                  | A.W1, A.U3, AU4     |

|                  |                                                              |                 |
|------------------|--------------------------------------------------------------|-----------------|
| S29 – Seminar 29 | Posterior mediastinum.                                       | A.W1, A.U3, AU4 |
| S30 – Seminar 30 | Radiologic anatomy of the thorax.                            | A.W1, A.U3, AU4 |
| S31 – Seminar 31 | Abdominal wall.                                              | A.W1, A.U3, AU4 |
| S32 – Seminar 32 | Peritoneum.                                                  | A.W1, A.U3, AU4 |
| S33 – Seminar 33 | Stomach, celiac trunk, duodenum. Superior mesenteric artery. | A.W1, A.U3, AU4 |
| S34 – Seminar 34 | Jejunum, ileum. Large intestine. Inferior mesenteric artery. | A.W1, A.U3, AU4 |
| S35 – Seminar 35 | Liver, spleen, pancreas. Portal vein.                        | A.W1, A.U3, AU4 |
| S36 – Seminar 36 | Urinary system. Retroperitoneal space.                       | A.W1, A.U3, AU4 |
| S37 – Seminar 37 | Male genital organs.                                         | A.W1, A.U3, AU4 |
| S38 – Seminar 38 | Female genital organs.                                       | A.W1, A.U3, AU4 |
| S39 – Seminar 39 | Pelvic floor. Perineum.                                      | A.W1, A.U3, AU4 |
| S40 – Seminar 40 | Radiologic anatomy of abdomen and pelvis.                    | A.W1, A.U3, AU4 |
| S41 – Seminar 41 | Shoulder and arm.                                            | A.W1, A.U3, AU4 |
| S42 – Seminar 42 | Forearm.                                                     | A.W1, A.U3, AU4 |
| S43 – Seminar 43 | Hand.                                                        | A.W1, A.U3, AU4 |
| S44 – Seminar 44 | Gluteal region. Thigh.                                       | A.W1, A.U3, AU4 |
| S45 – Seminar 45 | Leg.                                                         | A.W1, A.U3, AU4 |
| S46 – Seminar 46 | Foot.                                                        | A.W1, A.U3, AU4 |
| S47 – Seminar 47 | Radiologic anatomy of the limbs.                             | A.W1, A.U3, AU4 |

## 7. LITERATURE

### Obligatory

1. Moore KL, Dalley AF, Agur AMR. Clinically oriented anatomy. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins  
The basic textbook to prepare for the laboratory classes and theoretical tests. Multiple choice questions are written according to this book and lectures. Please read clinical blue boxes as well – they will expand your understanding of clinical importance of anatomical structures you learn about. Some of clinical issues may be also included in the tests.
2. Snell RS. Clinical neuroanatomy. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2010  
The basic textbook of clinical neuroanatomy. We recommend it for the CNS section.
3. Fitzgerald MJT, Gruener G, Mtui E. Clinical Neuroanatomy and Neuroscience. Saunders; 2012  
A comprehensive textbook of clinical anatomy of the central nervous system. We recommend it for the CNS section.
4. Dauber W, Feneis H. Pocket atlas of human anatomy : Founded by Heinz Feneis. Stuttgart ; New York: Thieme  
An illustrated dictionary of anatomical nomenclature based on Terminologia Anatomica, useful for practical classes, repetitions and practical tests.
5. FIPAT. Terminologia Anatomica. International Anatomical Terminology. Stuttgart, New York: Thieme; 2011  
The official anatomical terminology. The reference book in case of any discrepancies regarding the terminology used by various authors.

### Supplementary

1. Gilroy AM, MacPherson BR, Ross LM, Schünke M, Schulte E, Schumacher U. Atlas of anatomy. New York: Thieme; 2012  
A good and popular anatomical atlas. Our recommendation.

2. Sobotta – Atlas of Human Anatomy or Atlas of Anatomy  
There are numerous editions of one of the most popular anatomical atlases worldwide. Editors and publishers are different, but illustrations are the same.
3. Rohen JW, Yokochi C, Lütjen-Drecoll E. Color atlas of anatomy: A photographic study of the human body. Baltimore: Lippincott Williams & Wilkins; 2011  
An atlas with photographs of real anatomical specimens.

## 8. VERIFYING THE EFFECT OF LEARNING

| Code of the course<br>effect of learning | Ways of verifying the effect of learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Completion criterion                      |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| A.W1<br>A.U3, A.U4                       | <p><b>In terms of knowledge:</b> Theoretical MCQ Test at the end of each semester or after the summer semester*) (single best answer test).</p> <p><b>In terms of skills:</b> Oral check - naming of selected structures with a standardized assessment method described in detail with examples on the e-learning platform of the Department.</p> <p><b>In terms of social competences:</b> prolonged observation by a teacher, clinical problem solving in groups.</p> <p>--</p> <p>*) depending on the option chosen by a student</p> | 30 questions MCQ Test, passing level: 60% |

## 9. ADDITIONAL INFORMATION

In order to complete each semester of the optional course, a student is required to pass an MCQ test (single best answer) in the e-learning platform. The test will contain 30 questions with a passing level of 60% of correct answers. A student will have 2 attempts to pass the test.

Class schedule (two times a week):

Tuesdays at 4.30-5.15 p.m. (starts on Oct. 13) &

Thursdays at 4.30-5.15 p.m. (starts on Oct. 1)

Medical University of Warsaw has property rights, including copyright, to the syllabus. The syllabus may be used for educational purposes at the MUW only. Using of the syllabus for other purposes requires consent of the MUW.

### ATTENTION

The final 10 minutes of the last class in the block/semester/year should be allocated to students' Survey of Evaluation of Classes and Academic Teachers.