



**48SJ-CSL45**  
**ECTS: 1.28**  
**CYCLE: 2023L**

## Course syllabus - part A Clinical Skills Labs 4

### SUBJECT MATTER CONTENT

#### CLASSES

Performing the correct 12-lead ECG recording. Interpreting the correct and uncorrect ECG recording. Ischemia and myocardial infarction in ECG recording. Cardiac arrhythmias (life-threatening bradyarrhythmias, ventricular and supraventricular tachyarrhythmias). Ultrasound anatomy of the organs and structures of the neck, abdomen and pelvis - review. Information reminder about preparation and positioning of the patient for USG examination as well as types of ultrasound heads, transducer frequency and proper selection of the probe for the USG examination. Normal values and norms in USG examination of the structures and organs during neck, abdomen and pelvis examination. Types and methods of examinations of the neck (thyroid and salivary glands, vessels and lymphatic nodes) the most common pathologies and their differential diagnosis. USG Doppler examination of the neck vessels. FAST and emergency USG - how to do it. USG techniques for abdominal and pelvic organs examination (liver, gallbladder, bile ducts, pancreas, spleen, intestine, kidney, urinary bladder, prostate and uterus). Abdominal vessels and retroperitoneal space USG examination. Application of ultrasound in medicine, the most common symptoms and pathologies during ultrasound examination and interpretation of ultrasound images. Individual work of the student with the patient - assessment of professionalism, social competences and student-patient relationship. Basic principles and techniques of fine needle biopsy - presentation and student's individual work during biopsy.

#### TEACHING OBJECTIVE

Upon completion of this module, the student should: 1. understands clinical interpretations of the USG and the most common pathologies during USG examination; 2. understands the sonographic interrelationships between the structure of the organs of the head and neck, abdomen and pelvis taking into account the basics of ultrasound examination. The student should acquire and develop the basics and principles of ultrasound examination, taking into account topographic anatomy of the organs and structures of the neck, chest, abdomen and pelvis and interprets the ultrasound images. The student knows the basic symptoms and USG signs and principles of differentiation of selected pathologies in USG examination. The student can independently perform an USG examination and visualize and assess structures and organs of the neck, abdomen and pelvis as well as interpret the most common pathologies. The student can also work in a group using acquired skills and the available literature. The student is able to establish respectful contact with the patient, observing the principles of septic and antiseptic rules and the principles of professional behavior. The student knows the basic principles and techniques of fine needle biopsy under USG guidance, is able to perform a biopsy of the lesion under USG image control. The student knows and improves the methods of recording and interpreting the ECG test, performs 12-lead ECG, is able to recognize and correctly interpret cardiac arrhythmias in emergencies, he recognizes the

**Legal acts specifying learning outcomes:** 672/2020, 3112022  
**Disciplines:** medical sciences  
**Status of the course:** Fakultatywny  
**Group of courses:** B - przedmioty kierunkowe  
**Code:** ISCED 0912  
**Field of study:** Medicine, Medicine  
**Scope of education:**  
**Profile of education:** General academic  
**Form of studies:** full-time  
**Level of studies:** uniform master's studies  
**Year/semester:** 4/8

**Types of classes:** Classes, Laboratory classes  
**Number of hours in semester:** Classes: 21.00, Laboratory classes: 9.00  
**Language of instruction:** English  
**Introductory subject:** anatomy, physiology, pathophysiology, internal medicine  
**Prerequisites:** knowledge of anatomy, physiology, pathophysiology, internal medicine, physical examination

**Name of the organisational unit conducting the course:** Katedra Radiologii  
**Person responsible for the realization of the course:** lek. Karina Borszczewska-Chechłowska, dr hab. n. med. Anna Żurada  
**e-mail:** karina.borszczewska@uwm.edu.pl, anna.zurada@uwm.edu.pl

**Additional remarks:**

type and location of ischemic changes in the myocardium and selected ECG pathologies.

**DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY:**

**Symbols for outcomes related to the discipline:**

M/NM+++ , M/NMA\_P7S\_UW+++

**Symbols for outcomes related to the field of study:**

E.U29.+ , KA7\_UW5+ , KA7\_WG1+ , M/NM\_K.8.+ , M/NM\_E.W7.+ , K.5.+ , M/NM\_F.W10.+ , K.3.+ , KA7\_WG3+ , KA7\_UU1++ , M/NM\_B.W8.+

**LEARNING OUTCOMES:**

**Knowledge:**

W1 - Student knows and understands: M/NM\_B.W8. the physical grounds of non-invasive imaging methods

W2 - Student knows and understands: M/NM\_E.W7. the causes, symptoms, principles of diagnosing and treating the most frequently encountered internal diseases of adults and their complications: 1) cardiovascular diseases, including ischemic heart disease, heart defects, diseases of the endocardium, myocardium, and pericardium, heart insufficiency (acute and chronic), arterial and venous diseases, hypertension - primary and secondary, pulmonary hypertension, 2) respiratory diseases, including airways diseases, chronic obstructive pulmonary disease, bronchial asthma, bronchiectasis, cystic fibrosis, respiratory tract infections, interstitial respiratory diseases, pleural diseases, mediastinum diseases, obstructive sleep apnoea, respiratory distress (acute and chronic), bronchogenic carcinomas, 3) gastrointestinal diseases, including oral diseases, oesophageal diseases, stomach and duodenal diseases, intestinal diseases, pancreatic diseases, liver diseases, biliary tract and gallbladder diseases, 4) endocrine system diseases, including the hypothalamus and pituitary gland diseases, thyroid and parathyroid diseases, adrenal cortex and medulla diseases, ovary and testicle diseases and neuroendocrine tumours, polyglandular syndromes, diabetes of various types, and the metabolic syndrome - hypoglycaemia, obesity, dyslipidaemia, 5) kidney and urinary tract diseases, including acute and chronic kidney failures, glomerulus and interstitial kidney diseases, renal cysts, kidney stones, urinary tract infections, urinary tract carcinomas, especially of the urinary bladder and kidneys, 6) diseases of the haematopoietic system, including bone marrow aplasia, anaemia, granulocytopenia and agranulocytosis, thrombocytopenia, acute leukaemias, myeloproliferative and myeloproliferative-myelodysplastic neoplasms, myelodysplastic syndromes, neoplasms of mature lymphocytes B and T, haemorrhagic diatheses, thrombophilia, immediate life-threatening conditions in haematology, blood disorders in diseases of other organs, 7) rheumatic diseases, including systemic connective tissue diseases, systemic vasculitis, spondyloarthropathies, bone metabolic diseases, especially osteoporosis and osteoarthritis, gout, 8) allergic diseases, including anaphylaxis and anaphylactic shock, and angioedema, 9) water-and-electrolyte and acid-base disorders: dehydrations, excessive water retention, electrolyte management disorders, acidosis and alkalosis;

W3 - Student knows and understands: M/NM\_F.W10. the issues of the contemporarily employed imaging tests, especially: 1) radiological symptomatology of the basic diseases, 2) the instrumental methods and

imaging techniques used in medical surgeries, 3) the indications, contraindications, and patient preparation for individual types of imaging tests, and contraindications against the use of contrast agents  
W4 - Student knows and understands: KA7\_WG1 human body structure based on vital diagnostic examinations, in particular x-rays, ultrasound images, computed tomography and magnetic resonance imaging  
W5 - Student knows and understands: KA7\_WG3 principles of performing ultrasound examination (USG) and basic principles of fine-needle and core-needle biopsy

### **Skills:**

U1 - Student can: E.U29. E.U 29. perform the basic medical procedures and therapies, including: 1) taking the body temperature (both external and internal), the heart rate, the arterial pressure applying a non-invasive method, 2) monitoring the vital signs with the use of the patient monitor, pulse oximetry, 3) conducting spirometry tests, oxygenotherapy, assisted and controlled ventilation, 4) inserting the oropharyngeal tube, 5) performing intravenous, intramuscular, and subcutaneous injections, cannulating peripheral veins, sampling peripheral venous blood, sampling blood for culture, sampling arterial blood, sampling arterialized capillary blood, 6) taking swabs from the nose, throat, and skin, 7) catheterising the urinary bladder in women and men, inserting the gastric tube, performing gastric lavage, enema, 8) taking standard electrocardiogram tests and interpreting them, performing electrical cardioversion and defibrillation, 9) taking simple strip tests and measuring glucose concentration in blood

U2 - Student can: KA7\_UU1 assist with fine-needle and core-needle biopsy

U3 - Student can: KA7\_UW5 assist during an ultrasound examination, visualize selected structures and interpret the obtained images as well as conclude about the presence of pathological changes

### **Social competence:**

K1 - Student is ready to: K.3. observance of medical confidentiality and patient's rights

K2 - Student is ready to: K.5. perceiving and recognizing own limitations and self-assessment of deficits and educational needs

K3 - Student is ready to: M/NM\_K.8. formulating conclusions from own measurements or observations

### **TEACHING FORMS AND METHODS:**

Classes(W1;W2;U1;K1;K2;K3;):Practical exercises: the student recognizes and visualizes the organs of the neck, abdomen and pelvis during ultrasound examination, interprets images based on individual clinical cases and learns the rules and technique of fine-needle and thick-needle biopsy.

Laboratory classes(W1;W3;W4;W5;U2;U3;K1;K2;K3;):Practical exercises: performing and interpretation of 12-lead ECG.

### **FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:**

Classes (Colloquium practical) - The OSCE practical test. To pass the course, it is necessary to pass Ultrasound part and the ECG part with a score of not less than 60%. The assessment will be the arithmetic mean of the Ultrasound part and the ECG. -

Laboratory classes (Colloquium practical) - attendance at classes, performing and interpretation of ECG. To pass the course, it is necessary to pass Ultrasound part and the ECG part with a score of not less than 60%. The assessment will be the arithmetic mean of the Ultrasound part and the ECG. -

### **BASIC LITERATURE:**

1. Berthold Block, *Color Atlas of ultrasound anatomy*, Wyd. Thieme, R.

2011

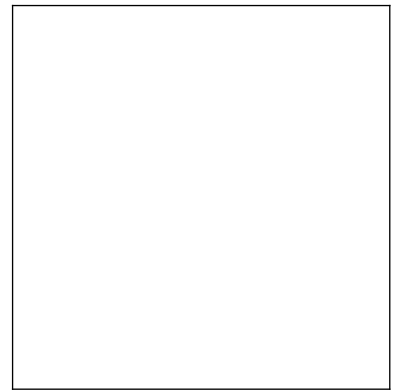
2. Steven M. Penny, *Pocket Anatomy Protocols for Abdominal Ultrasound*, Wyd. Wolters Kluwer Health, R. 2019

3. Berthold Block, *Abdominal Ultrasound: Step by Step*, Wyd. Thieme, R. 2015

**SUPPLEMENTARY LITERATURE:**

1. Malcolm S. Thaler, *The Only EKG Book You'll Ever Need*, Wyd. Wolters Kluwer, R. 2015

2. John McCafferty, James M. Forsyth, *Point of Care Ultrasound Made Easy*, Wyd. CRC Press, R. 2020



## Detailed description of ECTS credits awarded - part B

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**ECTS: 1.28**

**CYCLE: 2023L**

### Clinical Skills Labs 4

The number of ECTS credits awarded consists of:

1. Contact hours with the academic teacher:

- participation in: Classes	21.0 h
- participation in: Laboratory classes	9.0 h
- consultation	2.0
	Total: 32.0 h.

2. Independent work of a student:

Total: 0 h

contact hours + independent work of a student Total: 32.0 h

1 ECTS credit = 25-30 h of an average student's work, number of ECTS credit = 32.0 h : 25.0 h/ECTS  
= 1.28 ECTS on average: 1.0 ECTS

- including the number of ECTS credits for contact hours with the direct participation of an academic teacher: 0,00 ECTS points,

- including the number of ECTS credits for hours of independent work of a student: