SYLLABUS ANNEX The cycle of instruction 2019-2025			
Module/course name:	**Diagnostic Imaging [Radiology]**	**Module code**	LK.3.F.007
Faculty:	**I Faculty of Medicine with Dentistry Division** **II Faculty of Medicine with English Division**		
Major:	Medical		
Specialty:			
Level of study:	I (Bachelor studies) □ II (Master studies) □ integrated Master studies **X** III (Doctoral studies) □		
Mode of study :	full-time **X**		
Year of study:	I □ II □ III **X** IV □ V □ VI □	Semester :	1□ 2 □ 3 □ 4 □ 5□ 6 **X** 7□ 8□ 9□ 10 □ 11 □ 12 □
Module/course type:	obligatory **X** elective □		
Language of instruction:	Polish □ English **X**		

Form of education	**Hours**
Lecture, e-Lecture	**15**
Seminar, e-Seminar	**28**
Laboratory class	**52**
Practical class	
Internship	
Other	

Student's work input (participation in class, preparation, evaluation, etc.)	**Student's hourly workload**
1. In class	**95**
2. Student's own work including: 1 Preparation for class 2 Preparation for partials and finals	**85** **35** **50**
Summary of the student's workload	**210**
ECTS points for module/course	**7**

Educational objectives:

1. To understand basic radiological anatomy of the body and methods of imaging for different organs
2. To become familiar with the background of different imaging techniques, such as ultrasound, computed tomography, magnetic resonance imaging and positron emission tomography
3. To get proper understanding of basic radiological features of benign and malignant diseases
4. To review the most important facts about follow-up imaging, cancer screening and treatment monitoring, using diagnostics imaging tools

The matrix of learning outcomes for module/ subject with reference to verification methods of the intended educational outcomes and forms of instruction:

Learning	A student who has obtained a credit for the module/course has	Methods of	Form of

outcome code	the knowledge/skill to:	verifying the achievement of the intended learning outcomes:	instruction * provide the symbol
W01 (III.W40)	Knows types of imaging tests and radiological pictures of basic diseases	written exam	L, e-L, S, e-S, LC
W02 (V.W24)	Knows basics of the early detectability of cancers and principles of the screening in oncology	written exam	L, e-L, S, e-S, LC
W03 (V.W32)	Knows and understands causes, manifestations, principles of diagnosing and therapeutic proceedings in the most frequent hereditary diseases	written exam	L, e-L, S, e-S, LC
W04 (VI.W1)	Knows and understands causes, manifestations, principles of diagnosing and therapeutic proceedings of conduct in most frequent illness requiring the surgical intervention, in particular acute diseases of the abdominal cavity, the chest limbs and the head, fractures of the bone and injuries to organs	written exam	L, e-L, S, e-S, LC
W05 (VI.W3)	Knows the most frequent complications of "basic operating treatments and invasive diagnostic-procedural procedures".	written exam	L, e-L, S, e-S, LC
W06 (VI.W10)	Knows the issues of contemporary imaging studies, in particular: 1) radiological symptomatology of basic diseases, 2) instrumental methods and imaging techniques used for the performance medical treatments, 3) indications, contraindications and preparation of the patient for individual types of imaging tests and contraindications to the use of agents contrasting	written exam	L, e-L, S, e-S, LC
W07 (VI.W13)	Knows and understands causes, manifestations, principles of diagnosing and therapeutic proceedings relating to central nervous system in most frequent diseases; a) cerebral oedema, b) other forms of endocranial cramped conditions with their results, c) craniocerebral injuries, d) vascular CNS defects, e) CNS neoplastic tumors, f) illness of the spine and the spinal cord	written exam	L, e-L, S, e-S, LC
U01 (I.U4)	conclude about the relationships between anatomical structures on the basis of vital diagnostic tests, in particular in the field of radiology (overview photos, tests with the use of contrast agents, tomography computer and nuclear magnetic resonance);	discussion with students	LC
U02 (VI.U7)	Can evaluate the radiological finding in the most frequent types of fractures, peculiarily of fractures of long bone	discussion with students	LC
K01	The student shows creativity in the interpretation of the results of diagnostic tests	Direct observation	LC
K02	The student has the ability to communicate with the patient during the diagnostic examination	Direct observation	LC
K03	The student willingly cooperates with the imaging diagnostics team	Direct observation	LC

L- LECTURES; LC – LABORATORY CLASSES

EXAMPLES OF METHODS VERIFYING THE ACHIEVEMENT OF THE INTENDED LEARNING OUTCOMES:

In terms of knowledge: Oral exam (*non-standardized, standardized, traditional, problem-based*).

Written exam – the student produces/identifies answers (*essay, report; structured short-answer questions /SSQ/; multiple choice questions /MCQ/; multiple response questions /MRQ/; matching test; true/false test; open cloze test*).

In terms of skills: practical exam; Objective Structured Clinical Examination /OSCE/; Mini-CEX (mini – clinical examination); completion of a given assignment; project, presentation.

In terms of social competences:

A reflective essay; an extended observation by a supervisor/tutor; 360-degree assessment (feedback from teachers, peers, patients, other co-workers); self-assessment (portfolio included).

Course content: (use keywords referring to the content of each class following the intended learning outcomes):

Lectures:

1. Principles of computed tomography
2. Chest and mediastinum imaging.
3. Neuroradiology and central nervous system imaging.
4. Interventional radiology – angioplasty, stenting, embolization.
5. Gastrointestinal tract imaging.
6. Musculoskeletal imaging.
7. Application of radiology in the diagnosis of children's diseases.
8. Principles of ultrasound imaging.

Seminars:

1. Abdominal imaging.
2. Whole body CT scan in trauma patients.
3. Vascular diseases and techniques of treatment in interventional radiology.
4. Introduction to MRI and clinical application of the method.
5. Pediatric chest part 1
6. Pediatric chest part 2
7. Diagnostic imaging of gastrointestinal tract part 1
8. Diagnostic imaging of gastrointestinal tract part 2

Laboratory classes - selected issues from:

Application of diagnostic imaging methods in diseases of the heart and large vessels.

1. Methods of examinations
2. Congenital and acquired defects
3. Aortic atherosclerosis and arterial hypertension
4. Ischemic heart disease and coronary atherosclerosis
5. Valvular heart disease
6. Diseases of the pericardium
7. Tumors of the heart and pericardium

Application of imaging diagnostics methods in diseases of the lungs and pleura

1. Methods of examinations
2. Congenital and acquired defects
3. Pneumonia and lung abscess
4. Pulmonary tuberculosis
5. Pulmonary embolism
6. Acute respiratory distress syndrome
7. Emphysema
8. Diseases of the bronchi
9. Lung cancer
10. Diseases of the pleura

Application of diagnostic imaging methods in mediastinal diseases and chest injuries

1. Methods of examinations
2. Mediastinal tumors
3. Mediastinitis
4. Diseases of the esophagus
5. Pathology of the diaphragm
6. Chest injuries

Application of diagnostic imaging methods in diseases of the digestive tract (stomach, duodenum, small and large intestine)

1. Methods of examinations of the digestive tract
2. Peptic ulcer disease of the stomach and duodenum
3. Tumors of the stomach
4. Diaphragmatic hernias
5. Diseases of the small intestine
6. Diseases of the large intestine
7. Acute abdomen

Application of diagnostic imaging methods in diseases of the pancreas, liver and bile ducts

1. Methods of examinations
2. Focal and diffuse liver diseases
3. Diseases of the gallbladder and bile ducts
4. Diseases of the pancreas
5. Injuries of the abdominal organs

Application of diagnostic imaging methods in diseases of the genitourinary system and adrenal glands

1. Methods of examinations
2. Cystic kidney diseases
3. Inflammatory diseases of the kidneys
4. Kidney tumors
5. Renal hypertension
6. Injuries of the urinary system
7. Diseases of the urinary bladder
8. Diseases of the adrenal glands
9. Diseases of the reproductive system

Application of radiological diagnostic methods in diseases of the musculoskeletal system

1. Methods of examinations
2. Osteoarthritis
3. Osteoarticular tuberculosis
4. Rheumatoid arthritis
5. Bone tumors
6. Hormonal disorders
7. Injuries of bones and joints
8. Soft tissue tumors

Application of diagnostic imaging methods in diseases of the central nervous system
1. Research methods
2. Developmental defects
3. Injuries
4. Vascular diseases
5. Brain tumors
6. Inflammation
7. Alzheimer's disease and other causes of dementia
8. Diseases of the canal and spinal cord

Application of diagnostic imaging methods in pediatric diseases
1. The most common diseases of the central nervous system
2. The most common diseases of the musculoskeletal system
3. The most common diseases of the respiratory system and mediastinum
4. The most common diseases of the cardiovascular system
5. The most common diseases of the gastrointestinal tract
6. The most common diseases of the urinary system

Application of diagnostic imaging methods in diseases of the vascular system
1. Research methods
2. Symptomatology of vascular diseases
3. Developmental defects
4. Atherosclerosis
5. Aortic aneurysms
6. Narrowing of the renal artery
7. Ischemia of lower limbs
8. Vascular malformations and post-traumatic changes
9. Thrombotic syndromes of the venous system

Interventional radiology
1. Percutaneous endovascular angioplasty
2. Embolization treatments
3. Placement of filters in the vena cava
4. Percutaneous procedures in the biliary tract
5. Percutaneous procedures on the urinary tract
6. The use of stent grafts in vascular diseases
7. Neuroradiological treatments

Obligatory literature for lectures and labs: Amirsys Diagnostic Imaging Series (Mosby, 2005-2020); : lectures' hand-outs prepared by teacher

Complementary literature for lectures and labs; Insights into Imaging; Radiology,

Requirements for didactic aids (multimedia projector, movie camera, etc.)

Computer with DICOM viewer (e.g. OsiriX, Horos), multimedia projector, laser pointer, ultrasound machine (convex and linear probe), phantom for ultrasound examination

1. **Conditions for passing the course:** attendance at classes and lectures and passing the final exam
2. **Methods of evaluation -** written exam with a positive mark, multiple-choice questions, five possible answers, only one correct (MCQ). Passing 60% of correct answers.

   Rating scale: 60% cut-off, 60-68% (3); 69-76% (3.5); 77-84% (4); 85-91% (4.5); 92-100% (5)
3. **Attendance:** only one absence from classes and lectures may be justified (per semester)
4. **Being late:** up to 15 minutes; more than 15 minutes are included in the absence
5. **Uniforms**: lab coats and lab boots

6. **Missed exams / assignment / makeup policy:** in accordance with the Dean's regulations

The name and address of the department/~~clinic~~, where the course is taught (module/course); contact details (phone number/ email address):

Course Coordinator:

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Names of the teacher/teachers conducting classes:

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Signature of the head of the department/clinic **Dean's signature**

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Date of submission: ……