UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Course sylabus – part A
Diagnostic Imaging 1/2

48SJ-DI12
2024L
ECTS: 2.00

SUBJECT MATTER CONTENT:

Classes
Repetition of knowledge of radiological and clinical anatomy. Introduction and general
information in the field of diagnostic imaging. Acquainted with the organization and functioning of the different
lab in radiology department: X-ray, ultrasound, CT and MRI lab. The scope of different examinations methods
performed in laboratories like radiography (X-rays), ultrasound, CT and MRI, and interpretation of images based
on selected disease. Recognition of the normal anatomical structures of the chest and their variations and technically correct
chest X-ray. Diagnostic imaging of selected diseases of lung, pleura and mediastinal organs - the interpretation of
particular images in the field of radiology classic chest X-ray and CT studies in the field of diseases of the chest.
Diagnostic imaging of selected diseases of the liver, biliary tract, pancreas and stomach, XII-old, small intestine, colon and rectum, in the particular images of classical radiology X-ray, CT and MRI - interpretation of certain
radiological images. Radiological features of obstruction, bowel perforation, and nodular changes of the
gastrointestinal tract.

Lecture
Introduction to diagnostic imaging, selected methods of diagnostic imaging e.g. X-ray, MMG, ultrasound and CT
and MRI. Radiation protection. How to prepare the patient for examination using different radiological diagnostic
methods. Contrast media for radiology. Hospital Information Systems. Teleradiology. Diagnostic imaging of the
chest on the basis of selected diseases: radiography and basic symptoms in the diagnosis of selected diseases
of the chest. Diagnostic imaging in selected diseases of the mediastinum. Diagnostic imaging in selected
diseases of the abdominal cavity, using different diagnostic imaging technique: classical radiology, CT and MRI.

Seminar
Understanding of the fundamentals of anatomy and identification of the correct structures of the chest and abdomen in CT images. Diagnostic imaging of selected diseases of the chest

Legal acts specifying learning outcomes: 672/2020
Status of the course: None
Group of courses: None
Discipline: Medical Sciences
Classes:
Lecture (10 h)
Seminar (10 h)
Classes (10 h)
Step: Kierunek lekarski trzeci rok semestr szósty (oferta w jęz. angielskim dla obcokrajowców)
Program: Medicine
Form of studies:full-time
Level of studies: uniform master's studies

Introductory subject: Radiological and clinical anatomy, biophysics, pathophysiology

Prerequisites: Review knowledge about radiological and clinical anatomy and biophysics

Coordinators:

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including the lung and pleura. Differentiation between disease alveolar and interstitial lung diseases.
Recognition of pneumonia. Recognition and differentiation of edema, atelectasis and pleural fluid in the cavities
and the pericardial cavity. Lung cancer - radiological signs, recognizing, differential diagnosis . Recognizing the fundamental
heart disease. Recognition and interpretation of anomalies in the diagnosis image of the abdominal cavity with particular
reference to selected diseases of the liver, biliary tract and pancreas, stomach, XII months, small intestine, colon and rectum.

TEACHING OBJECTIVE:
Acquire knowledge of the types of examinations performed in radiology and diagnostic imaging and their application to clinical cases. To learn about the principles of operation of instruments, including the safety of their use, radiological protection, physical principles of formation of radiological images in individual imaging methods (x-ray, tk, mr, ultrasound, mammography, vascular laboratory, surgical radiology). To learn the basics of radiological symptoms, interpretation of examinations, radiological images in various disease entities. Getting acquainted with the diagnostic pathways in selected disease entities, with indications and contraindications to perform, ordering individual radiological examinations.

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:

Symbols for outcomes related to the field of study:

LEARNING OUTCOMES (Knowledge, Skills, Social competence):

W1 Graduate knows and understands: F.W10. the problems of currently used imaging tests, in particular: 1) radiological symptomatology of basic diseases, 2) instrumental methods and imaging techniques used to perform medical procedures, 3) indications, contraindications and preparation of the patient for particular types of imaging tests and contraindications to the use of contrast agents;

W2 Graduate knows and understands: KA7_WG2 knows the physical basics of selected imaging techniques in medicine and the principles of radiological protection, including radioisotope, functional diagnostics and structural diagnostics in nuclear medicine

W3 Graduate 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;

U1 Graduate can: KA7_UW3 applies to the rules of radiological protection, draws conclusions about the presence of a pathological process on the basis of selected imaging tests, carries out differential diagnosis

U2 Graduate can: B.U2. assess the harmfulness of ionizing radiation dose and follow the rules of radiation protection;

U3 Graduate can: make conclusions about the relationships between anatomical structures on the basis of vital diagnostic examination, in particular in the field of radiology (radiological examinations, examinations with the use of contrast agents, computed tomography and nuclear magnetic resonance);

K1 Graduate has the ability to: K.5. perceiving and recognizing own limitations and self-assessment of deficits and educational needs;

K2 Graduate has the ability to: M/NM_K.8. formulating conclusions from own measurements or observations;

K3 Graduate has the ability to: M/NM_K.7. of objective sources of information;

TEACHING FORMS AND METHODS:

Classes-['K1', 'U1', 'W1', 'K2', 'U2', 'W2', 'K3', 'U3', 'W3']-Analysis and interpretation of selected imaging examinations
Lecture-[]-Presentation of diagnostic imaging methods as well as indications and contraindications for their performance in the form of an interactive PowerPoint presentation
Seminar-[]-Interactive discussion of clinical cases in small discussion groups, taking into account the form of problem-based teaching. Various imaging methods in diagnostic imaging - indications and contraindications in clinical practice - discussion. Power Point presentation.

FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:

Seminar-(Part in the discussion)-[]-active participation in the discussion
Classes-(Competention test)-['U1', 'W1', 'U2', 'W2', 'U3', 'W3']-Evaluation of the work and cooperation in the group - Skills assessment discussion and cooperation in the group including the assessment of the various methods and skills during analysis of various clinical cases test. Final test with 20 clinical cases in the form of OSCE using multimedia methods, Passing from 60%
Lecture-(Part in the discussion)-['K1', 'U1', 'K2', 'K3']-active participation in the discussion

Literature:

1. ***Learning Radiology Recognizing the Basics 5th Edition***, William Herring, Elsevier, 2023, Strony: , Tom: (literatura podstawowa)

2. **https://radiologyassistant.nl** (literatura uzupełniająca)

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Detailed description of ECTS credits awarded - part B

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The number of ECTS credits awarded consists of:

1. Contact hours with the academic teacher:

- participation in: Lecture	10 h
- participation in: Seminar	10 h
- participation in: Classes	10 h
- consultation	2 h
	Total: 32 h

2. Independent work of a student:

independent student work	18.00 h
	Total: 18.00 h

Total (contact hours + independent work of a student): 50.00 h

1 ECTS credit = 25-30 h of an average student's work, number of ECTS,
ECTS Points = 50.00 h : 25 h/ECTS = **2.00** ECTS

Average: 2.00 ECTS

- including the number of ECTS credits for contact hours with the direct participation of an academic teacher	1.28 ECTS
- including the number of ECTS credits for hours of independent work of a student	0.72 ECTS