

SYLLABUS

INTERNATIONAL EUROPEAN
UNIVERSITY



**SCHOOL OF
MEDICINE**

Radiology

2021



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Discipline 

 Radiology

Teacher 




Teacher profile 




Consultations:

Offline consultations

 The first Tuesday of the month from 15:00 to 16:00

Online consultations

 The second Friday of the month from 15:00 to 16:00

Contact phone 



E-mail 



Discipline page 



Form of final control	final test	diff test	exam
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1 Short abstract of the discipline

Medical radiology (from the Latin terms radius - ray and logos - science) is a medical scientific discipline that includes radiation diagnostics and radiation therapy. Radiation diagnostics studies the use of various radiations in order to recognize numerous diseases, to study the morphology and function of human organs and systems in normal and pathological conditions. The role of radiological diagnostics in the training of future doctors is constantly increasing. This is due to the fact that radiological methods of research occupy a leading place in the diagnosis of most diseases. In recent decades, medical radiology has been supplemented by new research methods (computed tomography and magnetic resonance imaging, ultrasound, positron and single-photon emission tomography, interventional methods). Therefore, a graduate of a medical school is required to be able to choose the optimal radiological morphological changes in the pathology of various organs and systems from a large number of currently available radiological methods and to interpret the data of radiological research methods for clinical diagnosis. The clinician must be able to assess the possibilities of different methods of radiation therapy and choose the optimal one for the treatment of tumors and non-neoplastic diseases.

2 Prerequisite for studying the discipline

Mastering the discipline "Radiology" is based on the study of medical biology, parasitology and genetics by students; medical and biological physics; biological chemistry; bioorganic chemistry; human anatomy; normal physiology and integrates with these disciplines, based on knowledge of pathomorphology and pathological physiology, which students receive in parallel with the study of radiology.

3 The purpose and goals of the discipline

The purpose of teaching the discipline "Radiology" is to teach future physicians the diagnostic capabilities of radiation methods with the determination of radiation semiotics of diseases; learning the basics of radiation therapy, taking into account the indications and contraindications.

The main tasks in the study of the discipline "Radiology" are:

- to teach the student to choose from the existing radiological methods of inspection the optimal method of radiological research for detection of functional and morphological changes at pathology of various bodies and systems;
- learn to analyze the radiation semiotics of functional and morphological changes in the pathology of various organs and systems;
- learn to choose the optimal method of radiation therapy for the treatment of tumors and non-neoplastic diseases.

4 Learning outcomes

PLO-1 Collect data on patient complaints, medical history, life history.

PLO-2 Evaluate information on the diagnosis using a standard procedure based on the results of laboratory and instrumental studies (according to list 4).

PLO-3 Highlight the leading clinical symptom or syndrome (according to list 1). Establish the most probable or syndromic diagnosis of the disease (according to list 2). Assign laboratory and / or instrumental examination of the patient (according to list 4).

Carry out differential diagnosis of diseases (according to list 2). Establish a preliminary clinical diagnosis (according to list 2).

PLO-6 To determine the principles and nature of treatment (conservative, operative) of the disease (according to list 2).

PLO-7 Establish a diagnosis (according to list 3).

PLO-14 Determine the source and / or location of the required information depending on its type; receive



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4 Learning outcomes

the necessary information from a specific source; process and analyze the received information.

PLO-16 Prepare an annual report on personal production activities; keep medical records of the patient and the population in the state language.

PLO-17 Conduct screening to identify major non-communicable diseases; evaluate morbidity indicators, integrated health indicators; identify risk factors for the occurrence and course of diseases; to form risk groups of the population.

PLO-21 To form goals and determine the structure of personal activity. Be able to make informed decisions, choose ways and strategies to communicate to ensure effective teamwork. Be responsible for the choice and tactics of communication.

PLO-24 Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

PLO-25 To organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.

5 ECTS credits

3 credits / 90 academic hours

6 The structure of the discipline

Names of content modules and topics	Names of content modules and topics			
	Lectures	Practical occupation	ISW	Individual work
Content section 1. Introduction to radiology. Biological action of ionizing radiation. Dosimetry.				
Topic 1. Types of radiology departments. Features of the device of radiological and radiological departments. OSPU. NRBU. Basic properties of ionizing radiation. Biological effect of ionizing radiation on a healthy and pathologically altered cell.	2	2		4
Topic 2. Radioactivity and dose. Dosimetry of ionizing radiation: units and methods for determining radioactivity and radiation dose.		2		2
<i>Together to the content section 1 - 10</i>	2	4		6
Semantic section 2. Methods of visualization in radiological diagnostics.				
Topic 3. Physical and technical bases of X-ray and CT examination. Physical and technical bases of radionuclide and MRI research.	2	2		4
Topic 4. Physical and technical bases of ultrasound diagnostics.		2		2
<i>Разом за змістовим розділом 2.</i>	2	4		6



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The structure of the discipline

Names of content modules and topics	Names of content modules and topics			
	Lectures	Practical occupation	ISW	Individual. work
Semantic section 3. Complex radiological diagnosis of diseases of the thoracic cavity.				
Topic 5. Radiation research methods and radiation anatomy of the thoracic cavity. Fundamentals of radiation semiotics of pathology of the thoracic cavity.	2	2		2
Topic 6. Radiation methods of research of respiratory organs. Radiation signs of inflammatory diseases of the respiratory system and lung tumors.		2		4
Topic 7. Radiation methods for the study of the cardiovascular system.		2		2
Topic 8. Radiation signs of diseases of the cardiovascular system.		2		2
<i>Together on the content section 3 - 20</i>	2	8		10
Semantic section 4. Complex radiological diagnostics of diseases of abdominal organs.				
Topic 9. Radiation methods for the study of the gastrointestinal tract. Radiation signs of diseases of the gastrointestinal tract. Radiation research methods and radiation anatomy of the hepatobiliary system. Radiation signs hepatobiliary diseases	2	4		4
<i>Together on the content section 4 - 10</i>	2	4		4
Semantic section 5. Complex radiological diagnostics of diseases of the urinary system.				
Topic 10. Radiation research methods and radiation anatomy of the urinary system. Radiation signs of kidney and urinary tract diseases. Radial signs of developmental abnormalities and tumors of the urinary system.	2	2		2
<i>Together on the content section 5 - 6</i>	2	2		2
Semantic section 6. Complex radiological diagnostics of diseases of the musculoskeletal system.				



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The structure of the discipline

Names of content modules and topics	Names of content modules and topics			
	Lectures	Practical occupation	ISW	Individual work
Topic 11. Radiation research methods and radiation anatomy of the musculoskeletal system. Radiation signs of traumatic injuries of the musculoskeletal system. Radiation signs of inflammatory diseases and tumors of the musculoskeletal system.	2	2		4
<i>Together on the content section 6 - 8</i>	2	2		4
Contents section 7. Complex radiological diagnosis of diseases of the breast, genital and endocrine systems.				
Topic 12. Radiation research methods and radiation anatomy of the breast. Radiation signs of breast diseases. Radiation research methods in endocrinology. Radiation signs of thyroid disease.		2		6
<i>Together on the content section 7 - 10</i>		2		6
Contents Section 8. Complex radiological diagnosis of CNS diseases, in oncology and emergencies.				
Topic 13. Radiation research methods and radiation anatomy of the CNS. Radiation signs of diseases and CNS injuries.		2		2
<i>Together on the content section 8 - 10</i>		4		6
Content section 9. Principles and methods of radiation therapy.				
Topic 14. Radiation diagnostics in oncology. Principles and methods of radiation therapy. Basics of radiation therapy of tumor and non-tumor diseases.		2		2
Topic 15. Methods of radiation therapy: radiotherapy; contact methods; long-range gamma therapy and radiation therapy with high sources energies.		2		2
<i>Together on the content section 9 - 10</i>		4		4
Final control of knowledge and skills of students in radiology		2		
TOTAL HOURS IN THE DISCIPLINE - 90	8	32	50	



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7 Signs of discipline

Term of teaching	semester	International disciplinary integration	Course year (study)	Cycles: general training / vocational training / free choice
1 semester	V	Yes	3 course	General training

8 Evaluation system and requirements

The current success of students is assessed on a 4-point scale (2; 3; 4; 5) on each practical, taking into account the approved assessment criteria for the discipline. The student must receive a grade from each topic for further conversion of grades into points on a multi-point (200-point) scale.

Criteria for assessing current learning activities:

Excellent ("5") - the student correctly answered 90-100% of the tests of format A (from the database "Step-2"). Solves situational problems of increased complexity, is able to summarize the material.

Good ("4") - the student correctly answered 70-89% of the tests of format A. Has the necessary practical skills and techniques to perform them in excess of the required minimum.

Satisfactory ("3") - the student correctly answered 50-69% of the tests of format A. Has only a mandatory minimum of research methods.

Unsatisfactory ("2") - the student correctly answered 50% of the A format tests. During the answer and demonstration of practical skills he makes significant, gross mistakes.

Assessment of independent work of students in preparation for classroom practical classes is carried out during the current control of the topic in the relevant classroom.

The semester credit is evaluated on a two-point scale (passed / not credited) and a 200-point scale by determining the arithmetic mean of current grades for each practical lesson on a 4-point scale, and its subsequent conversion into points on a 200-point scale. The minimum number of points that an applicant must score is 120.

Final control includes standardized control of theoretical readiness (testing, oral examination, assessment of individual tasks) and practical training (structured according to the procedure control of practical skills on simulators and models).

<https://ieu.edu.ua/docs/rate-of-study.pdf>

9 Conditions of admission to the final control

Students who have completed all types of work, tasks provided for in the curriculum for the semester in accordance with the discipline, attended all classes provided for in the curriculum, written and passed a medical history and have an average score for current academic activity of at least "3 are allowed to the semester final control. "(72 points on a 120-point scale).

<https://ieu.edu.ua/docs/rate-of-study.pdf>

10 Discipline policy

The policy of the discipline is determined by the requirements that practitioners impose on students in the study of clinical discipline. The condition of a successful educational process is the personal observance by each student of a higher educational institution of the rules of conduct adopted both at the university and in society. The future doctor must have a high level of culture of behavior, behave with dignity, tact, maintain endurance and self-control.



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10 Discipline policy

The student must come to class on time, be dressed in an academic medical uniform (white coat or surgical suit). The student must adhere to the schedule of the educational process, come to classes prepared on the topic of the lesson. During the lesson, the student must not leave the classroom without the permission of the teacher; use mobile phones and other means of communication and information without the permission of the teacher, engage in extraneous activities, distract other students. When writing different types of work, the student must follow the rules of academic integrity.

The teacher must adhere to the implementation of the curriculum, objectively assess the knowledge and skills of students. During the educational process, the teacher must be mindful of anti-corruption measures and not engage in corrupt activities.

11 Policy on skipping classes and completing tasks later than the deadline

A student who, for valid reasons, documented, was not subject to the current control of the masses is entitled to pass the current control within two weeks after returning to study.

A student who was absent from classes without good reason, did not participate in current control activities, did not eliminate academic debt, is not allowed to the final semester control of knowledge in this discipline, and on the day of the exam in the examination sheet the researcher "not allowed". Re-taking a differentiated test in the discipline is appointed subject to all types of educational, independent (individual) work provided by the working curriculum of the discipline and is carried out in accordance with the approved by the directorate schedule of liquidation of academic debt.

<https://ieu.edu.ua/docs/050.pdf>

12 The policy of academic integrity

Participants in the educational process are guided by the principles of academic integrity

<https://ieu.edu.ua/docs/011.pdf>

13 Recommended sources of information

Main literature:

1. Radiology. Radiation therapy. Radiation diagnostics: A textbook for students of higher education. institutions of VMNZ IV level of accreditation / O.B. Kowalski, DS Mechev, VP Danilevich. - Vinnytsia: Nova Kniga, 2013. - 512 p.
2. Radiology (radiation diagnostics and radiation therapy). Kyiv, Book Plus, 2013. - 743 p.
3. Radiology (radiation diagnostics and radiation therapy). Test tasks. Part 1. Kyiv, Book Plus. 2015. - 104 p.
4. Radiology (radiation diagnostics and radiation therapy). Test tasks. Part 2. Kyiv, Book Plus. 2015. - 168 p.
5. Radiology (radiation diagnostics and radiation therapy). Test tasks. Part 3. Kyiv, Book Plus. 2015. - 248 p.

Auxiliary:

Clinical Radiology: The Essentials Fourth Edition by Daffner M.D. F.A.C.R., Dr. Richard H., Hartman M.D., Dr. Ma (2014) - 4th edition. 2014. 546 p.

Radiology for the wards / a student – to – student guide. Latha G. Stead, Matthew S. Kaufman, S. Matthew Stead, Anjali Bhagra, Nora E. Dajani.2009. 265 p.



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Recommended sources of information

Additional information sources:

<https://radiographia.info/>

<http://nld.by/help.htm>

<http://learningradiology.com>

<http://www.radiologyeducation.com/>

<http://www.radiologyeducation.com/>

<https://www.sonosite.com>

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Tips for successful learning on the course

If you want to be successful in this discipline, you need to:

1. Be active, persistent, inquisitive, consistent
2. Be neat and polite
2. Systematically prepare for practical classes
3. Perform tasks for independent work and defend them in class.
3. Attend the class in a medical gown
4. Solve tests and problems independently, actively work in class.
5. Prepare presentations and crossword puzzles on the subject. Participate in student scientific conferences and engage in research work in scientific circles of the department.

I wish you perseverance, determination and motivation to study. And then success will come to you!

See you in class!

Don't forget medical gowns!