

SYLLABUS

concerning the cycle of education 2019-2025

(date range)

1.1. BASIC INFORMATION CONCERNING THIS SUBJECT / MODULE

Subject / Module	Nuclear medicine
Course code / module *	Mn/F
Faculty of (name of the leading direction)	Medical College of Rzeszów University
Department Name	Medical College of Rzeszów University
Field of study	medical direction
Level of education	uniform master's studies
Profile	practical
Form of study	stationary / extramural
Year and semester	year IV, semester VII
Type of course	obligatory
Coordinator	dr hab. n. med . Małgorzata Tacikowska
First and Last Name of the Teacher	

* - According to the resolutions of the Faculty of Medicine

1.2. Forms of classes, number of hours and ECTS

Lecture	Exercise	Conversation	Laboratory	Seminar	ZP	Practical	Self-learning	Number of points ECTS
15	10	-	-	5	-	-	-	2

1.3. The form of class activities

☒ classes are in the traditional form

☐ classes are implemented using methods and techniques of distance learning

1.4. Examination Forms / module (exam, **credit with grade** or credit without grade)

2. REQUIREMENTS

News in the fields of biology, chemistry, biochemistry, laboratory diagnostics, biophysics, basic immunology

3. OBJECTIVES, OUTCOMES, AND PROGRAM CONTENT USED IN TEACHING METHODS

3.1. Objectives of this course/module

C1	Mastering the theoretical foundations in the field of nuclear medicine and the acquisition of practical skills regarding the interpretation of the results of isotopic tests and the assessment of: indications and contraindications to perform isotopic tests; the possibility of clinical use of radioisotopes in diagnosing various pathological conditions; possibilities of therapeutic use of radioisotopes. Developing the ability to perform basic medical procedures applicable in diagnostics and therapy with the use of radioisotopes, e.g. administration of an intravenous or intravenous isotope preparation.
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3.2 OUTCOMES FOR THE COURSE / MODULE (TO BE COMPLETED BY THE COORDINATOR)

EK (the effect of education)	The content of the learning effect defined for the subject (module)	Reference to directional effects (KEK)
EK_01	He knows the problems of contemporary image research, in particular: a) radiological symptomatology of basic diseases, b) instrumental methods and imaging techniques used for therapeutic procedures, c) indications, contraindications and preparation of patients for particular types of imaging examinations and contraindications to the use of contrast agents;	F.W10.
EK_02	Assists with typical surgery, can prepare the operating field and anesthetize the local surgical area	F.U1
EK_03	Uses basic surgical instruments	F.U2
EK_04	Applies to the principles of asepsis and antisepsis	F.U3
EK_05	He can provide a simple wound, put on and change a sterile surgical dressing	F.U4
EK_06	He is aware of his own limitations and the ability to constantly improve his skills	K.04.

3.3 CONTENT CURRICULUM (filled by the coordinator)

A. Lectures

Course contents
Indications and contraindications for performing isotopic tests
Interpretation of the results of isotopic tests
Principles of the operation of the isotope therapy department
Elements of radiobiology and radiological protection
Methods for measuring ionizing radiation most commonly used in medicine

B. Exercises

Course contents
Interpretation of the results of isotopic tests: a) radioimmunochemical and metabolic studies., b) the principles of gamma-camera functioning and the description of scintigraphy (heart and lung scintigraphy, brain and kidney scintigraphy, thyroid scintigraphy and thyroid ultrasound).
Possibilities of clinical use of radioisotopes. Application of isotopic methods in endocrinology, cardiology and oncology.
Therapeutic application of radioisotopes. Principles of the operation of the isotope therapy division and treatment with radioactive iodine. Nuclear medicine in oncology. Brachytherapy.

C. Seminars

Course contents
Division and characteristics of radioisotope diagnostic tests
<i>In vitro</i> radioisotope diagnostics: radioimmunochemical (RIA and IRMA) and metabolic studies.
<i>In-vivo</i> radioisotope diagnostics

3.4 TEACHING METHODS

Lecture: multimedia presentation.

Exercises: practical exercises, demonstration, lecture form.

Seminars: practical classes in the laboratory.

Student's own work: work with a book

4 METHODS AND EVALUATION CRITERIA

4.1 Methods of verification of learning outcomes

Symbol of effect	Methods of assessment of learning outcomes (Eg.: tests, oral exams, written exams, project reports, observations during classes)	Form of classes
EK_01	Written test	Lecture
EK_02, EK_03, EK_04,	Practical pass	Exercises

EK_05, EK_06		
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4.2 Conditions for completing the course (evaluation criteria)

Lecture (EK_01):

Written test, test pass and open questions

1. test pass and open questions:

A: Questions in the field of messages to remember;

B: Questions in the field of speech to understand;

C: Solving a typical written task;

D: Solving an atypical writing task;

- for insufficient solution of tasks only from areas A and B = grade 2.0

- for solving tasks only from areas A and B, the possibility of obtaining max. rating 3.0

- for solving tasks from the area A + B + C, the possibility of obtaining max. evaluation 4.0

- for the solution of tasks in the area A + B + C + D, the possibility of obtaining a rating of 5.0

Written or oral colloquium

5.0 - has knowledge of each of the contents of education at the level of 90% -100%

4.5 - has knowledge of each of the content of education at the level of 84% -89%

4.0 - has knowledge of each of the content of education at the level of 77% -83%

3.5 - has knowledge of each of the content of education at the level of 70% -76%

3.0 - has knowledge of each of the content of education at the level of 60% -69%

2.0 - has knowledge of each of the contents of education below 60%

Classes and Seminars (EK_02, EK_03, EK_04, EK_05,):

- pass with an assessment including:

- attendance

- activity on exercises

- grades from partial tests

5.0 - the student actively participates in the classes, recognizes and is able to properly name chemical phenomena in the human body, and assess the regularity of nuclear medicine

4.5 - the student actively participates in the classes, with a little help from the teacher recognizes and is able to correctly name the chemical phenomena in the human body, and to assess the nuclear medicine

4.0 - the student actively participates in classes, with minor corrections of the teacher, making minor mistakes in recognizing the phenomena of nuclear medicine

3.5 - the student participates in classes, with numerous corrections and teacher's instructions recognizes and is able to correctly name the phenomena of nuclear medicine

3.0 - the student participates in the classes, with very many corrections and teacher's instructions he recognizes and is able to correctly name the phenomena of nuclear medicine

2.0 - the student passively participates in classes, commits blatant errors in the diagnosis and proper naming of nuclear medicine phenomena.

5. Total student workload required to achieve the desired result in hours and ECTS credits

Activity	Hours / student work
Hours of classes according to plan with the teacher	30
Preparation for classes	15
Participation in the consultations	2
The time to write a paper / essay	-
Preparation for tests	15
Participation in colloquia	1
Other (e-learning)	-
SUM OF HOURS	63
TOTAL NUMBER OF ECTS	2

6. TRAINING PRACTICES IN THE SUBJECT / MODUL

Number of hours	-
Rules and forms of apprenticeship	-

6. LITERATURE

READING:

1. ZARYS MEDYCYNY NUKLEARNEJ, S. Nowak, K. Rudzki, E. Pętka & E. Czech, Wydawnictwo Naukowe PZWL, Warszawa 1998.
2. MEDYCYNĄ NUKLEARNA, L. Królicki, Fundacja im. Ludwika Rydygiera, Warszawa, 1996.