

SYLLABUS
concerning the cycle of education 2020-2026
(date range)

1.1. BASIC INFORMATION CONCERNING THIS SUBJECT / MODULE

Subject / Module	CLINICAL PHARMACOLOGY
Course code / module *	FmK/E
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 V, semester IX
Type of course	obligatory
Coordinator	prof. dr hab. n. med. Piotr Tutka
First and Last Name of the Teacher	prof. dr hab. n. med. Piotr Tutka dr hab. Dorota Bartosiuk mgr farm. Patrycjusz Kołodziejczyk

* - 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
				30				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

Basics of knowledge in the field of anatomy, physiology, biochemistry, microbiology, pathology.
Basics of knowledge, skills and competences in the field of clinical sciences according to the 3rd, 4th and 5th year programs.

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

3.1. Objectives of this course/module

C1	Obtaining knowledge about the principles of rational pharmacotherapy, including pharmacokinetics, pharmacodynamics and pharmacoeconomics of individual drug groups
C2	Acquisition of knowledge about clinical effects, indications, contraindications and adverse drug reactions
C3	Obtaining the ability to monitor the safety of pharmacotherapy
C4	Obtaining knowledge on the interaction between drugs with particular emphasis on polypharmacy
C5	Acquiring the ability to plan and monitor the therapy of the most common diseases in accordance with applicable standards
C6	Acquiring the ability to adapt therapeutic options (resulting from mechanisms of drug action) to pathological processes taking place in the body
C7	Obtain basic knowledge on the separateness of pharmacotherapy for children, the elderly, pregnant women and patients with liver and kidney damage
C8	Obtaining the ability to individualize pharmacological treatment in specific clinical situations
C9	Acquiring knowledge on formal and legal issues and ethical problems related to clinical trials of medicines
C10	Acquiring the ability to analyze the results of scientific research
C11	Obtaining knowledge about the directions of development of pharmacological treatment of diseases

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 lists the indications for the implementation of monitored therapy	E.W40.
EK_02	Defines the basic pharmacoeconomic concepts	E.W41.
EK_03	It analyzes possible side effects of individual drugs and their interactions	E.U17.
EK_04	He proposes to individualize the existing therapeutic guidelines and other methods of treatment for ineffectiveness or contraindications to standard therapy	E.U18.

EK_05	Recognizes the symptoms of drug dependence and proposes therapeutic treatment	E.U19.
EK_06	Interprets the pharmaceutical characteristics of medicinal products and critically evaluates advertising materials regarding medicines	E.U31.
EK_07	Knows and understands the causes, symptoms, principles of diagnosis and therapeutic treatment in the case of the most common diseases of children	E.W3.
EK_08	Knows and understands the causes, symptoms, principles of diagnosis and therapeutic treatment in relation to the most common internal diseases occurring in adults and their complications:	E.W7.
EK_09	He knows and understands the basic principles of pharmacotherapy of elderly people's diseases	E.W10.
EK_10	Knows and understands the causes, symptoms, principles of diagnosis and therapeutic treatment in the most common diseases of the nervous system, including	E.W14.
EK_11	He knows the symptoms, principles of diagnosis and therapeutic treatment in the most common mental diseases	E.W17.
EK_12	He knows the possibilities of modern cancer therapy (including multimodal therapy), perspectives of cell and gene therapies and their undesirable effects	E.W25.
EK_13	He knows the principles of pain treatment, including cancer and chronic pain	E.W29.
EK_14	Knows and understands the causes, symptoms, principles of diagnosis and therapeutic and prophylactic treatment in the most common bacterial, viral, parasitic and fungal diseases, including pneumococcal infection, viral hepatitis, acquired immune deficiencies, sepsis and nosocomial infections	E.W32.
EK_15	Team work skills when planning therapy	K02
EK_16	Active search for information about medicines with the use of additional teaching aids	K04
EK_17	Reliable preparation for exercises	K04
EK_18	Possessing the ability of analytical and synthetic thinking based on acquired knowledge	K04
EK_19	He actively discusses topics related to the effects of drugs and their use in therapy	K04

3.3 CONTENT CURRICULUM (filled by the coordinator)

A. Lectures

Course contents

1. The role of a clinical pharmacologist in the treatment process. Pre-registration drug testing system. Pharmacoeconomics.
2. Principles and differences in pharmacotherapy in children and the elderly
3. The principles and dissimilarities of pharmacotherapy in pregnant women, in kidney failure and liver
4. Adverse drug reactions and the principle of post-authorization drug safety supervision. Clinically significant interactions between drugs and between drugs and supplements and food.
5. The most common errors of doctors in the field of pharmacotherapy.

B. Seminars

Course contents

1. Principles of pharmacotherapy of selected diseases of the cardiovascular system part I (with special emphasis on hypertension, ischemic heart disease and cardiology)
2. Principles of pharmacotherapy of selected diseases of the cardiovascular system part II (with particular emphasis on chronic heart failure, the most common arrhythmias and the use of drugs that affect blood clotting)
3. Principles of pharmacotherapy of bronchial asthma, chronic obstructive pulmonary disease and selected allergic disorders.
4. Principles of pharmacotherapy in diseases of the urinary system. Distinctions of pharmacotherapy in patients with kidney damage.
5. Principles of treatment of selected hormonal disorders (with particular emphasis on diabetes mellitus I and II and thyroid diseases)
6. Completion I. Clinical exercises.
7. Principles of pharmacotherapy of selected neurological disorders (with special emphasis on epilepsy, Alzheimer's disease, emergencies in neuroscience)
8. Principles of pharmacotherapy of selected psychiatric disorders (with particular emphasis on affective disorders and schizophrenia). Addiction to psychoactive drugs.
9. Selected aspects of pharmacological treatment of tumors. Pharmacotherapy for pains

for different reasons.

10. Principles of chemotherapy of the most common infections. Rational antibiotic therapy.

11. Analysis of cases and clinical situations related to the safety of drug use. Analysis of clinical scenarios concerning incorrect pharmacotherapy.

12. Credit II. Clinical exercises.

3.4 TEACHING METHODS

Seminar / exercises: discussion, case analysis, resolving clinical scenarios, clinical exercises "at the patient's bedside".

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	oral answer, colloquium, practical pass, test pass	Exercises
EK_02	colloquium, test pass	Exercises
EK_03	colloquium, practical pass, test pass	Seminar, Exercises
EK_04	oral answer, colloquium, practical pass, test pass	Seminar, Exercises
EK_05	oral answer, colloquium, practical pass, test pass	Exercises
EK_06	Oral answer	Seminar, Exercises
EK_07	oral answer, colloquium, practical pass, test pass	Exercises
EK_08	oral answer, colloquium, practical pass, test pass	Exercises
EK_09	oral answer, colloquium, practical pass, test pass	Exercises
EK_10	oral answer, colloquium, practical pass, test pass	Exercises
EK_11	oral answer, colloquium, practical pass, test pass	Exercises
EK_12	colloquium, test pass	Exercises
EK_13	oral answer, colloquium, practical pass, test pass	Exercises
EK_14	oral answer, colloquium, practical pass, test pass	Exercises
EK_15	student's observation by the teacher	Seminar, Exercises
EK_16	student's observation by the teacher	
EK_17	student's observation by the teacher	
EK_18	student's observation by the teacher	
EK_19	student's observation by the teacher	

4.2 Conditions for completing the course (evaluation criteria)

The condition for passing the subject is:

- presence at all seminars and exercises
- demonstration of knowledge and skills at least on a sufficient level as regards the material in accordance with the program (see substantive content)
- demonstrating skills of critical analysis of acquired information and application of pharmacological knowledge in clinical practice
- obtaining at least a satisfactory final rating

The final grade will be a resultant of all learning outcomes, i.e. knowledge, skills and social competences of the student, it will be based on internal regulations, which assumes collecting partial points of students. The score will include oral responses, written tests / tests with clinical case analysis (minimum two) and assessment of activity (assessment of competence and attitude). The condition for passing the subject will be obtaining the minimum number of points determined in the regulations. The final mark in the semester will depend on the number of points obtained. Students who do not get the required minimum number of points will not be able to pass the course. The possibility of obtaining the final pass will be specified in detail in the regulations.

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	
Participation in the consultations	
The time to write a paper / essay	
Preparation for tests	
Participation in colloquia	
Other (e-learning)	30
SUM OF HOURS	60
TOTAL NUMBER OF ECTS	2

6. TRAINING PRACTICES IN THE SUBJECT / MODUL

Number of hours	
Rules and forms of apprenticeship	

6. LITERATURE

READING:

1. Orzechowska-Juzwenko K., praca zbiorowa, Farmakologia Kliniczna - znaczenie w praktyce medycznej, 2006

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| <ol style="list-style-type: none">2. Charakterystyka produktów leczniczych3. Aktualne wytyczne polskich i międzynarodowych towarzystw naukowych w zakresie podstawowych farmakoterapii |
| <p>Additional literature:</p> <ol style="list-style-type: none">1. Brenner G. M., Stevens C. W., Farmakologia, 20102. Katzung B.G., Masters S.B., Trezor A.J., pod red. Buczek W., Farmakologia ogólna i kliniczna, Tom I i II, 20123. Brunton L.L., Lazo J.S., Parker K.L. pod red. Buczek W., Farmakologia Goodman & Gilman. Tom I i II, 20074. Mamcarz A., Farmakoterapia kardiologiczna. Tom I i II, 2011 |

Acceptance Unit Manager or authorized person