

SYLLABUS

concerning the cycle of education 2022-2028

(date range)

**1.1. BASIC INFORMATION CONCERNING THIS SUBJECT / MODULE**

Subject / Module	<b>Microbiology with parasitology</b>
Course code / module *	<b>Mb/C</b>
Faculty of (name of the leading direction)	<b>Medical College of Rzeszów University</b>
Department Name	<b>Department of Microbiology</b>
Field of study	<b>medical direction</b>
Level of education	<b>uniform master's studies</b>
Profile	<b>practical</b>
Form of study	<b>stationary / extramural</b>
Year and semester	<b>year II, semester IV</b>
Type of course	<b>obligatory</b>
Coordinator	<b>dr hab. n. med. Edyta Podsiadły</b>
First and Last Name of the Teacher	<b>dr hab. Edyta Podsiadły, dr Mariusz Worek, mgr Beata Malec</b>

\* - 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
18	24			6				5

**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)**

**lectures** - oral or written final exam

**classes, seminars** - credit with grade including: student's skills, attendance, grades from partial tests

**2. REQUIREMENTS**

Knowledge of biology and chemistry at the extended level
--

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

### 3.1. Objectives of this course/module

C1	Ability to classify bacteria, viruses, fungi and parasites taking into account their pathogenicity and microbiological diagnostics.
C2	Understanding the forms and mechanisms of interaction in the microbial-host system.
C3	The correct diagnosis of etiopathogenesis, epidemiology of infections.
C4	Familiarization with disinfection and sterilization processes with the concept of asepsis in the aspect of the problem of nosocomial infections.
C5	Acquainting with the possibilities of prophylaxis and treatment of infectious diseases. The correct selection of antibiotics depending on the microorganism. Teaching the principles of rational chemotherapy
C6	Knowledge of algorithms for diagnostic procedures in bacterial, viral and fungal infections and the ability to use this knowledge to commission appropriate microbiological tests
C7	Knowledge of algorithms for diagnostic procedures in parasitic infections and the ability to use this knowledge to commission appropriate parasitological tests

### 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 symptoms of iatrogenic infections, the ways of their spread and pathogens causing changes in individual organs	C.W.17
EK_02	He knows invasive forms or stages of development for selected parasitic protozoa, helminths and arthropods,	C.W.15
EK_03	He discusses the principle of the parasite-host system and knows the basic disease symptoms caused by parasites	C.W.16
EK_04	He knows and understands the basics of microbiological and parasitological diagnostics	C.W.18
EK_05	Recognizes the most common human parasites on the basis of their structure, life cycles and disease symptoms	C.U.7
EK_06	Uses serological methods to diagnose infectious diseases	C.U.8
EK_07	Interprets the results of microbiological tests	C.U.10
EK_08	Designs a scheme of rational chemotherapy, empiric and targeted	C.U.15

### 3.3 CONTENT CURRICULUM (filled by the coordinator)

#### A. Lectures

<b>Course contents - semester IV</b>
Parasites - the construction of parasites. Grounds for classification. Pathogenesis of infections. Diagnostic methods
Influence of infections on pregnancy and delivery. Congenital and perinatal infections. Sexually transmitted infections. Selected pathogens in infections of newborns.
Blood infections caused by bacteria, fungi, viruses, parasites
Infections of the nervous system caused by bacteria, fungi, viruses, parasites. Eye infections
Infections of the skin and subcutaneous tissue, bones and joints. Urinary tract infections
Infections of the digestive system, caused by bacteria, fungi, viruses, parasites
Infections of the respiratory system caused by bacteria, fungi, viruses, parasites. Atypical and intracellular bacteria

### **B. Problems of laboratory exercises, practical classes**

<b>Course contents - semester IV</b>
Ex. 8 (3 h) - Parasitic diseases. Parasitological diagnostics. cz.I.
Ex. 9 (3 h) - Parasitic diseases. Parasitological diagnostics. cz.II.
Ex. 10 (3 h) - Microbiological diagnosis of UTI. Inoculation of urine. Bacteriological urinalysis. Bacterial etiological factors. Diagnostic methods. Microbiology of venereal diseases. Congenital and perinatal infections. Interpretation of diagnostic test results.
Ex. 11 (3 h) - Blood infections
Ex. 12 (3 h) - Infections of the blood and the central nervous system. Eye infections.
Ex. 13 (3 h) -. Local infections - skin and subcutaneous connective tissue. Interpretation of diagnostic test results.
Ex. 14 (3 h) - Microbiological diagnostics in infections and gastrointestinal intoxications. Interpretation of diagnostic test results.
Ex. 15 (3 h) - Respiratory tract infections. Interpretation of diagnostic test results.

### **C. Seminar**

<b>Course contents of the seminar - semester IV</b>
Sem. 8 (2 h) - Parasites - protozoa,
Sem. 9 (2 h) - Parasites - Flat and round worms
Sem 10 (2h) - Zoonoses. Serological and genetic methods of infection diagnostics. Rules for downloading and sending material for microbiological tests

### 3.4 TEACHING METHODS

**Lecture:** Lecture with multimedia presentation

**Laboratory exercises:** Analysis of laboratory tasks concerning selected medical cases with discussion. Practical tasks related to the implementation of microbiological diagnostics. Work in groups. Performing practical tasks. Interpretation of exemplary test reports.

**Seminars:** Student presentations. Short problem lectures with discussion.

## 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_ 01-04	colloquium IV, exam	Lectures, Exercise, Seminars
EK_ 05-08	colloquium V, exam	Lectures, Exercise
	colloquium VI, exam	Lectures, Exercise

### 4.2 Conditions for completing the course (evaluation criteria)

<p>Exercises, seminars:</p> <p>a) full participation and activity in exercises</p> <p>b) partial written exams and passing the pre-test</p> <p>Range of ratings: 2.0 - 5.0</p> <p>Lectures: Credit based on attendance. Exam after one-year course - test pass (100 questions) with closed, open and multiple-choice questions:</p> <p>A: Questions in the field of messages to remember;</p> <p>B: Questions in the field of speech to understand;</p> <p>C: Solving a typical written task;</p> <p>D: Solving a non-standard written task.</p> <p>Duration of the test 100 minutes.</p> <p>Seminar: Credit based on an average of 3 tests and activity and preparation for classes (three plus = 5, two plus = 4, one plus = 3, no plus = 2). The final semester is the average of the grades obtained (semester III - 3 marks, semester IV - 2 marks). In the case of an unsatisfactory grade from the colloquium, the student has the right to one correction term. It is assessed at the end of the semester by means of a comprehensive and final colloquium. In the case of failing a partial colloquium, the student is assessed at the end of the semester by means of a final and final colloquium. The student has the right to two comprehensive retake tests. In the case of receiving a negative grade, the student has the right to apply to the Dean</p>
--

for the commission colloquium. In order to verify the student's preparation for the seminar, the lecturer may do a preliminary test from previous and current classes, counted as "+" or "-". The resulting +/- are included in the final assessment as exercise activity.

**Exercises:** The condition for receiving the credit for laboratory exercises is to describe the results together with the conclusions in the positively evaluated report. Passing the report is a necessary condition allowing for the next exercises. The final mark of the exercises is the average of the partial marks, i.e. from: 6 tests and the average grade from 15 reports from the exercises. The student has the right to one repetition period for each of the 6 tests. In the case of failing a partial colloquium, the student is assessed at the end of the semester by means of a final and final colloquium. The student has the right to two comprehensive tests. In the case of not receiving a positive grade, the student has the right to apply to the Dean with a request for a commission colloquium.

**Examination:** The condition for admission to the exam is a positive grade from the seminar, laboratory exercises (both semesters) and laboratory exercises (both semesters) and credit from lectures (based on attendance)

Students have two exam dates: the first and the second term.

The final grade is the grade from the exam.

**Knowledge assessment:**

**Written test**

5.0 - has knowledge of each of the education content at the level of 93% -100%

4.5 - has knowledge of each of the content of education at the level of 85% -92%

4.0 - has knowledge of each of the education content at the level of 77% -844%

3.5 - has knowledge of each of the content of education at the level of 69% -76%

3.0 - has knowledge of each of the content of education at the level of 60% -68%

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

**Skill assessment**

5.0 - the student actively participates in classes, recognizes and is able to properly name biological phenomena in the human body, and to assess the microbiological regularities of the functioning of the human body. Skillfully uses basic laboratory techniques,

4.5 - the student actively participates in the classes, with little help from the teacher recognizes and is able to properly name biological phenomena in the human body, and to assess the microbiological regularities of the functioning of the human body. He uses basic techniques well

4.0 - the student actively participates in classes, with minor corrections of the teacher, committing minor mistakes in the recognition of microbial phenomena in the human body. He uses laboratory techniques well

3.5 - the student participates in classes, with numerous corrections and teacher's instructions recognizes and is able to correctly name microbiological phenomena in the human body, often making mistakes while using laboratory techniques

2.0 - the student passively participates in classes, commits blatant errors in the diagnosis and proper naming of microbiological phenomena, unskilfully uses laboratory techniques, committing many errors many times

#### 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	48
Preparation for classes	50
Participation in the consultations	-
The time to write a paper / essay	8
Preparation for tests	40
Participation in colloquia	1
Other (e-learning)	
SUM OF HOURS	147
TOTAL NUMBER OF ECTS	5

#### 6. TRAINING PRACTICES IN THE SUBJECT / MODUL

Number of hours	-
Rules and forms of apprenticeship	-

#### 6. LITERATURE

<p><b>READING:</b></p> <ol style="list-style-type: none"> <li>Heczko PB, Wróblewska M, Pietrzyk A. Mikrobiologia Lekarska. PZWL,2014</li> <li>Dzierżanowska D. Antybiotykoterapia praktyczna. Alfa Medica Press, Bielsko-Biała 2009.</li> <li>Kadłubowski R., Kurnatowska A. (red.):Zarys parazytologii lekarskiej. Wydawnictwo Lekarskie PZWL, 1999, Warszawa</li> </ol>
<p>Additional literature:</p> <ol style="list-style-type: none"> <li>Murray PR, Rosenthal KS, Pfaller MA: Mikrobiologia. Elsevier Urban and Partner, Wrocław, 2011</li> <li>Szewczyk EM: Diagnostyka bakteriologiczna. PWN, Warszawa, 2013</li> <li>Buczek A. Choroby pasożytnicze Epidemiologia, diagnostyka, objawy. Koliber, Lublin 2010</li> </ol>

4. Stępień-Rukasz H., Rzymowska J., Kołodziej P., Lorencowicz R.: Diagnostyka wybranych inwazji pasożytniczych przewodu pokarmowego człowieka, - Krajowa Izba Diagnostów Laboratoryjnych, MedPharm Polska, 2016, Wrocław

Acceptance Unit Manager or authorized person