



Syllabus disciplines "Parasitology"

1. General information	
Name faculty	Medical
Educational program (branch, specialty, level higher education, formteaching)	22 Protection health, 222 Medicine, second (master's)level higher education, full-time form
Educational year	2023/2024
Name of discipline, code (<i>electronic address on siteLNMU named after Danylo Halytskyi</i>)	" Parasitology"; VB 1.37 http://new.meduniv.lviv.ua/kafedry/kafedra-mikrobiologiyi/
Department (<i>name, address, telephone, e-mail</i>)	Chair of microbiology Lviv, str. Zelena, 12 tel. +38(032)276-28-36 Kaf_microbiology@meduniv.lviv.ua
Head department (<i>contact e-mail</i>)	Professor, d.m. N. Korniychuk O.P. o_korniychuk@ukr.net
Year of study (<i>the year in which study is being implemented disciplines</i>)	3 course
Semester (<i>semester, in which disciplines is realized study</i>)	IY semester
Type discipline/module (<i>mandatory / optional</i>)	Discipline by choice (elective)
Teachers (<i>names, surnames, scientific degrees and titles teachers who teach discipline, contact e- e-mail</i>)	Prof. O.Korniychuk – o_korniychyk@ukr.net assoc. prof., PhD S.Pavliy – microvirus60@ukr.net assoc. prof. PhD I.Tymchuk – ira.tymch@gmail.com ass. A. Hural – adriana.hural43@gmail.com ass. Y. Konechnyi – yulian.konechnyi@gmail.com
Erasmus yes/no (<i>availability disciplines for students at within the framework Erasmus+ programs</i>)	No
The person responsible for syllabus (<i>person to whom provide comments concerning syllabus , contact e-mail</i>)	assoc. prof. PhD S.Pavliy
Number of ECTS credits	3.0 ECTS credits

Number hours (<i>lectures/practical training/independent work students</i>)	90 hours Lectures -12 - hours Practical classes –18 hours work students – 60 hours
Language teaching	English
Information about consultations	Consultations are held in accordance with the schedule approved by the Chair of the department
Address, telephone and rules of operation of the clinical base, office... (if necessary)	-

2. Short resume of the discipline

Elective course "Parasitology": studies the origin, evolution and properties of pathogens for a person parasites, regularities interaction their with macroorganism, immune system and mechanisms against infectious immunity, methods diagnostics, principles treatment and specific prevention infectious diseases. Study this one educational disciplines necessary for understanding the role of parasites in the pathogenesis of infectious and a number of somatic diseases, significance microbiological methods in diagnostics, basics aseptics and antiseptics.

WITH purpose integration to world educationally - scientific space in content programs was the main directions of development of modern diagnostics, treatment and prevention of diseases are taken into account, what caused by parasites

3. Objective and tasks of the discipline

1. 1 Objective

- deepening and generalization information relatively organizations parasitic systems, basic their properties, ways of development and interaction between the parasite and the host. Studying medical parasitology and final goals - are established on the basis of the OPP training of a doctor in accordance with block its content module.

Naturally - scientific preparation – and is basis for buildings content educational disciplines

The description of goals is formulated through skills in the form of target tasks (actions). On the basis of final goals to Each meaningful of the module are formulated specific goals in in the form certain skill (action), targeted tasks, what ensure achievements final study goals disciplines

2. Tasks of the discipline

- creation systemic approach of understanding parasitic organisms on based on ideas about structure, functioning and interaction between molecular, cellular, tissue, organ, population and species and biospheric organization levels;
- development ideas about unity processes onto- and phylogeny in parasitic systems;
- formation views on evolution parasites, which is component part of nature, have your features structure, functioning and development;
- integration information about cycles development free existing and parasitic animals different taxonomic groups;
- creation the only one systems of knowledge about relationships between alive organisms

1.3 Competencies and learning outcomes, the formation of which contributes to the discipline

According to the requirements of the Higher Education Standard, the discipline ensures that students acquire the following competencies:

- integral:

The ability to solve complex problems, including those of a research and innovation nature in the field of medicine. Ability to continue learning with a high degree of autonomy.

- general:

- *general (GC):*

1. Objective

- The purpose of studying the discipline "Microbiology, Virology and Immunology" - training a specialist capable of solving complex problems and problems of microbiological diagnosis, etiotropic treatment and specific prevention of diseases caused by microorganisms, both in the learning process and in the professional activity of the doctor.

Microbiology, virology and immunology are the basis for the study of epidemiology, infectious diseases, clinical immunology and allergology, pharmacology, general hygiene, internal medicine, surgery and pediatrics and other clinical disciplines, which integrates teaching with these disciplines and application of knowledge in microbiology, virology and immunology in the process of further study and in professional activities.

2. Tasks of the discipline

- **The main tasks** of studying the discipline "Microbiology, virology, immunology" are:
 - to interpret the biological properties of pathogenic and non-pathogenic microorganisms, patterns of their interaction with macroorganism and the external environment;
 - to define methods of microbiological and virological diagnostics, etiotropic therapy and specific prevention of infectious diseases, as well as non-infectious diseases of microbial genesis;
 - explain the role and functions of the immune system of the human body;
 - to interpret the basic mechanisms of the formation of the immune response of the human body;
 - identify the main types of pathological response of the immune system and the relationship with the emergence of the most common human diseases.

1.3 Competencies and learning outcomes, the formation of which contributes to the discipline

According to the requirements of the Higher Education Standard, the discipline ensures that students acquire the following competencies:

- *integral:*

The ability to solve complex problems, including those of a research and innovation nature in the field of medicine. Ability to continue learning with a high degree of autonomy.

- *general:*

GC- 1. Ability to abstract thinking, analysis and synthesis.

GC - 2. Ability to learn and master modern knowledge.

GC - 3. Ability to apply knowledge in practical situations.

GC - 4. Knowledge and understanding of the subject field and understanding of professional activity.

GC - 5. Ability to adapt and act in a new situation. ZK - 6. Ability to make informed decisions.

GC - 7. Ability to work in a team.

GC – 8. Ability to interpersonal interaction.

GC -10. Ability to use information and communication technologies. ZK-11. Ability to search, process and analyze information from various sources.

GC - 12. Determination and persistence in relation to assigned tasks and assumed responsibilities.

GC - 13. - Awareness of equal opportunities and gender issues.

GC - 14. - The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

GC - 15. - The ability to preserve and multiply the moral, cultural, scientific values of the achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.

- *Special (professional, subject):*

SC - 2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.

SC - 3. Ability to establish a preliminary and clinical diagnosis of the disease.

SC - 6. Ability to determine the principles and nature of treatment and prevention of diseases.

SC -10. Ability to perform medical manipulations.

SC - 14. Ability to plan and carry out preventive and anti-epidemic measures regarding infectious diseases.

SC - 23. Ability to develop and implement scientific and applied projects in the field of health care.

SC - 24. Compliance with ethical principles when working with patients and laboratory animals.

SC - 25. Observance of professional and academic integrity, bear responsibility for the reliability of the obtained scientific results.

4. Prerequisites of the discipline

1. Medical biology with parasitology
2. Histology, cytology and embryology
3. Biophysics
4. Biochemistry
5. Normal physiology
6. Pathological physiology
7. Pathological anatomy

- **special (professional, substantive) (FC):**

3. The ability to establish a preliminary and clinical diagnosis of the disease. 6. Dateability to definition principles and character treatment and prevention diseases
14. Ability to planning and carrying out preventive and anti-epidemic measures of infectious diseases
15. Ability to carrying out examinations working capacity
16. Ability to driving medical documentation, in ago 13 number of electronic forms
17. Ability to assessment impact surrounding environment, socio-economic and biological determinant on state health of the individual, family, population
18. Ability to carrying out analysis activity doctor, division, institution protection health, ensuring the quality of medical care and increasing the efficiency of the use of medical resources.
19. Ability to organizations and integration granting medical help the population and carrying out marketing medical services
20. Ability to carrying out epidemiological and medical and statistical of research health people; processing social, economic and medical information.
21. It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on security issues health and tangents questions to specialists and non-specialists, in particular to persons studying.
22. Ability manage workers processes in sphere protection health, which is complex, unpredictable and need new ones strategic approaches
23. Ability elaborate and implement scientific and applied projects in sphere protection health.
24. Compliance ethical principles at work with patients, laboratory animals
25. Adherence to professional and academic integrity, to be responsible for credibility received scientific results

4. Prerequisites course

It will be successful teaching and mastery competencies with disciplines "Modern problems virology" » is based on knowledge, received at studies listed discipline:

1. Medical biology with parasitology
2. Histology, cytology and embryology
3. Biophysics
4. Biochemistry
5. Normal physiology
6. Pathological physiology
7. Pathological anatomy

5. Software the results teaching Learning outcomes:

Integrative final program learning outcomes, the formation of which is facilitated by the educational discipline

PLO -1	Have thorough knowledge of the structure of professional activity. Be able to carry out professional activity, that needs renewal and integration of knowledge Carry responsibility by professional development, ability to further professional teaching with high level autonomy.
PLO -2	Understanding and knowledge fundamental and clinical biomedical sciences, on levels enough for solution professional problems in sphere protection health.
	Specialized conceptual knowledge, what include scientific gains in sphere

PLO-3	protection health and is basis for carrying out research, critical understanding problems in sphere of medicine and tangential to her interdisciplinary problems	
PLO-19	Plan and embody system anti-epidemic and preventive activities, of occurrence and dissemination diseases among people.	
PLO-24	Organize necessary level individual security (own and persons about whose cares) in case occurrence typical dangerous situations in individual polyactivity	
PLO-27	Free communicate state and in English language as orally Yes and in writing for discussion professional activities, of research and projects.	
List results teaching Learning outcomes:		
Result code teaching	Content result teaching	Link to the code matrices competencies
Kn-1 S-1	Know and be able to analyze biological properties pathogenic and non-pathogenic parasites and regularities their interaction with macroorganism and external environment.	PLO-1, PLO-2; PLO-3, PLO-27
Kn-2 S-2	Know and understand the main mechanisms of formation antiparasitic immunity a person	PLO-1, PLO-2; PLO-3, , PLO-27
Kn-3 S-3	Know the main ones types pathological reactions immune systems and communication their from emergence most common parasitic human infections.	PLO-1, PLO-2; PLO-3, , PLO-27
C-1	Ability determine methods diagnostics parasitic infections	PLO-1, PLO-2; PLO-3, , PLO-24 PLO-27
C-2	Ability determine means etiotropic therapy and specific prevention parasitic infectious diseases	PLO-1, PLO-2; PLO-3, , PLO-19. PLO-24 PLO-27
AB-1 AB-2	Ability to processing state, social and medical information	PLO-1, PLO-2; PLO-3, PLO-27
6. Discipline format and scope		
Discipline format (full-time / part-time)	Full-time. 3.0 ECTS credits, 90 hours <i>Content modules :</i> <i>Introduction to medical parasitology</i> <i>Protozoa</i> <i>Helminths</i>	
Kind classes	Number hours	Number groups
Lectures	12 hours	11
Practical	18 hours	11
Independent	60 hours	11

7. Topics and scope of the discipline

Code of classes	Topic	Content teaching	Code of result teaching	Teacher
L-1	<p><i>Lectures Substantial modules .</i> Introduction to medical parasitology. Parasitism and its forms. Influence parasite on a person. Features classification of parasitic pathogens diseases</p>	<p>Presentation of the lecture material from using multimedia support Delineation problematic questions</p>	<p>Kn-1; Kn-2 -S-2 S-3, C-1, C-2 Ab-1 Ab 2</p>	<p>assoc. prof. PhD S.Pavliy</p>

L-2	Features pathogenesis and immune answers on parasitic disease	Granting answers on questions and their solution Presentation of the lecture material from using multimedia support	Kn-1;Kn-2 -S-2 S-3, C-1, C-2 AB-1, AB-2	S.Pavliy
L-3	Principles of modern diagnostics parasitic diseases	Delineation problematic issues. Providing answers to questions and their solution	Kn-1;Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	
L-4	Basics of etiologic therapy and prevention of parasites diseases		Kn-1; Kn-2 -S-2 S-3, C-1, C-2 AB-1, AB-2	
L-5	Medical value ticks as causative agents diseases and carriers of pathogens a person	Presentation lecture material from using multimedia support	Kn-1; Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	
L-6	Medicine travels Protozoan and helminthic diseases travelers	Delineation problematic issues. Providing answers to questions and their solution	Kn-1; Kn-2 -S-1 S-2 S-3, C-1, C-2 AB-1, AB-2	
P-1	Biological features and classification of protozoa. Microbiological diagnosis diseases caused by pathogenic the simplest (amoebiasis, giardiasis, trichomoniasis, leishmaniasis). Drugs for prevention and treatment	Practical classes for: 1. Study features morphology and reproduction of parasites in the process of their interaction with host cell.	Kn-1; Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	
P-2	Microbiological diagnosis malaria, toxoplasmosis Preparations for prevention and treatment.	2. Cultivation some types of parasites in cellular cultures	Kn-1; Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	S.Pavliy
P-3	Helminth infections. Classification. Epidemiology and features pathogenesis. Diagnostic methods. Principles treatment and	3. Production and interpretation serological reactions, what are applied in of parasitology.	Kn-1; Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	I.Tymchuk – A Hural. Y. Konechny i-

	prevention diseases Nematodes: ascariasis, enterobiosis, trichinellosis, strongyloidosis, trichocephalosis	The study of modern diagnostic methods and identification parasitic infections 4. Working out practical skills, which are based on able to distinguish to cultivate and identify parasitic pathogens and analyze study resultsthem biological properties, epidemiology and pathogenesis of infections.5. Decision independently situational problems, which have clinical direction, and them the solution is based on knowledge and skill interpret quantitative and qualitative data results research Skill analyze biological properties pathogenic for people parasites; Role definition parasites in pathologies a person; Treatment results diagnostics parasiticinfections Ability to do conclusions forby the results of search The ability to choosedrugs that use for a specific prevention and treatment parasitic infections		
P-4	Features of biology Trematode Trematodoses: opisthorchosis, schistosomiasis, fascioliasis Microbiological diagnosis diseases Drugs fortreatment.		Kn-1; Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	
P-5	Helminth infections. Cestodoses: diphyllotriosis, echinococcosis, hymenolepidosis, teniarynchosis. Features of biology causative agents Epidemiology and pathogenesis. Microbiological diagnosis diseases Drugs fortreatment.		Kn-1; Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	
P-6	Helminth infections and parasitic allergy: current state of the problem and ways solution.		Kn-1; Kn-2 -S-1 S-2 S-3,C-1, C-2 AB-1, AB-2	

		6. Compilation schemes diagnostics infection that are caused parasites Preparation for licensed exam "Step-1".		
SEW-1	Biological properties trypanosome Epidemiology, pathogenesis, diagnosis, prevention and treatment	Work with educational methodical literature, Internet-resources; filling workbooks for independent work students; preparation for licensed exam "Step-1"; work with solution individual situational tasks	Kn-1; C-1 S-1,AB-1	. S.Pavliy I.Tymchuk — A Hural. Y. Konechy—
SEW -2	Biological properties Balantium Epidemiology, pathogenesis, diagnosis, prevention and treatment		Kn-1; C-1 S-1,AB-1	
SEW -3	Role parasites at immunodeficient diseases(OX)		Kn-1; C-1 S-1,AB-1	
SEW -4	Clams, shellfish, insects and chordates are intermediate hosts helminths Value arthropods in life nematodes		Kn-1; C-1 S-1,AB-1	
SEW -5	Acariform mites. Itchy itching Acne gland. Dust mites - residents of their housing, their medical value.		Kn-1; C-1 S-1,AB-1	
SEW -6	Medical value lice, ways of human infection diseases; methods of combating by these insects		Kn-1; C-1 S-1,AB-1	
SEW -7	Parasitic diseases, what transmitted by direct contact(scabies, phthisis, trichomoniasis). Features diagnostics I will run prevention and treatment.		Kn-1; C-1 S-1,AB-1	
SEW -8	Teaching K. I. Scriabin about deworming, devastation and decontamination of the environment Wednesday is higher than eggs and larvaehelminths		Kn-1; C-1 S-1,AB-1	
SEW -9	Characteristic type Annular worms class Leeches Leech medical: biology, application in medicine		Kn-1; C-1 S-1,AB-1	

8. Verification results teaching

Current CONTROL

Assimilation topics is controlled on practical classes in accordance to specific goals

Control of practical skills is implemented on the basis of the assessment of the ability to investigate parasitespreparations, to study the biological and antigenic properties of parasites, to study their interaction with a sensitive host cell (when studying cell culture), carry out staging and interpret the results of serological reactions with paired sera, perform interpretationresults modern methods parasitic diagnostics, analyze mechanism actions antiparasitic drugs. Evaluation is carried out by direct control the teacher performing the skill by the student, as well as using illustrated tests and situational tasks

At each practical lesson, students' knowledge is assessed according to a four-point system ("5", "4", "3", "2") according to criteria assessment current student's activities.

Calculation of the number of points for the current activity in general for the discipline is conducted on based on the grades received by the student on a traditional scale for each practical session during study discipline, by calculating the arithmetic mean (CA), rounded to two characters after the comma. Received size converted in points by multi-point such a scale as follows:

$$x = \frac{CA * 120}{5}$$

Minimal number points , which may dial student by current activity at studies disciplines, is equal to 72 points.

The maximum number of points that can be scored student for current activity at studies disciplines, is equal to 120 points.

Assessment independent work student

Material for independent work of students, which is provided in the subject of the practical lesson simultaneously with the classroom work, is evaluated during the current control of the topic on the appropriate one auditorium occupation Assessment topics which are carried out on independent processing and not are included to topicsclassrooms educational classes, is carried out under time final control (exam).

Result code teaching	Species code classes	Way verification results teaching	Criteria enrollment
Zn-1, Mind-1, Zn-2, Mind-2, Mind-3, K-1, K-2, AV-1AB-2	P - 1-6, SRS – 1- 20.	For the current one control of knowledge students created test task, which contain typical tests by the subject of the lesson (including tests with several correct answers) theoretical question, which include question with independent work; situational tasks (with the 3rd questions); practical skills according to the topic occupation. Assessment of test tasks: Perfectly ("5") – The student is correct responds on 90-100% tests	Perfectly ("5") – Student right corresponds to 90-100% tests. Correctly, clearly logically and completel yanswers to all question. May to bind closely theory and practice,right demonstrates implementation practical skills Decides situational tasks increased difficulties, can generalize

		<p>Fine ("4") – Student right answered on 71- 89% tests</p> <p>Satisfactorily ("3") – The student answered correctly on 60-70% tests</p> <p>Unsatisfactorily ("2") – The student answered less, than 60% of tests.</p> <p>Unsatisfactorily ("2") – The student answered less, than 60% of tests.</p> <p>Unsatisfactorily ("2") – The student answered less, than 60% of tests.</p> <p>Assessment practical skills:</p> <p>"5" - demonstration skills correct, complete;</p> <p>"4" - demonstration skills with 2-3 insignificant mistakes;</p> <p>"3" - demonstration skills with 1 significant rough by mistake or more, than 3- ma insignificant mistakes</p> <p>"2" - demonstration skills are completely wrong or with 2 and more rough mistakes</p> <p>Assessment theoretical question:</p> <p>"5" is the answer correct full</p> <p>"4" is the answer correct incomplete</p> <p>"3" - answer from mistakes, incomplete</p> <p>"2" - answer not on essentially illogical</p> <p>Assessment situational tasks:</p> <p>"5" - correct, are full answers on all question</p> <p>"4" - correct are full answers on two question</p> <p>"3" - correct full answer on one question</p> <p>"2" - answers on all question wrong or missing.</p>	<p>material owns methods research involume, necessaryfor activity doctor</p> <p>Good ("4") – Student right answered on 71-89% tests Right and basically answered thequestion. Demonstrates implementation practical skills Right uses theoretical knowledge when solving practical tasks.Can decidelight and medium complexities situational tasks. Owns necessary practical skills and their techniques implementation in volume,which exceeds necessary minimum.</p> <p>Satisfactorily ("3") – Student right answeredon 60-70% of the tests.Incomplete, forhelp additional questions, responds to question. Not may independently build a clear logical answer. Under time answers anddemonstrations practical skillsthe student does errors. Student only decides the easiest tasks owns only mandatory</p>
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			a minimum of methods research. Unsatisfactory ("2") – Student answered on Less, than 60% tests Not knows the material of the current topic, no can build logical answer does not respond to additional question, no understands the material. Under time answers and demonstrations practical skills does significant rough errors.
Final CONTROL			
General system assessment	Participation in work during semester/ exam – 60%/40% by 200-ball scale		
Scales assessment	traditional 4-point scale, multi-point (200-point) scale, rating scale ECTS		
Conditions admission to final control	Student visited everyone practical occupation and got not less than 120 points by current progress		
Type of final control	Method carrying out final control		Criteria enrollment
Credit	They have be enrolled everyone topics, carried out on current control. Grades from the 4th grade scales are converted in points by multi-point(200-point) scale in accordance with Provisions "Criteria, rules and procedures evaluation of the results of educational activities students"		<i>Maximum number points - 200. Minimal number score- 120</i>

9. Policy of the discipline

The educational process is organized on the basis of the credit-transfer system in accordance with the requirements of the Bologna process using the rating system success of students. Inadmissible: copying and plagiarism; absences and lateness to classes; using a mobile phone, tablet or other mobile devices during classes (except for cases stipulated by the curriculum and methodical recommendations teacher); untimely performance of tasks set by the teacher during the current, final control knowledge, and also independent work students Inadmissible: neglect rules techniques security under time practical classes, draft,

10. literature

Basic :

1. Medical microbiology, virology and immunology (edited by Academician **V.P. Shirobokov**). –Vinnitsa., "New book". – 2011.- 951 p.
2. SI. Klimniuk, I.O. Sitnik, V.P. Shirobokov Practical microbiology : educational manual;by zag.re.: V.P. Shirobokova, SI. Klimnyuk - Vinnitsa : Nova Book, 2018. - 576 p.
3. Microbiology, virology and immunology in questions and answers ; by general ed.: V.P. Shirobokova, SI. Klimnyuk - Ternopil: Ukrmedknyga, 2019. - 340 with.
4. Sitnik AND. AT. Microbiology, virology, immunology / Sitnik AND. AT., Klimnyuk WITH. AND., creatively M.WITH. — Ternopil : Ukrmedknyga, 2003. — 392 p.
5. Microbiology, virology and immunology (under ed. Prof. Danileichenko V.V., Korniyuchuk O.P.). – Vinnitsa., "New book". – 2017.- 371 p.
6. Haydash AND. WITH., Flegontova IN. IN. Medical virology.- Luhansk, 2002.
7. Vinohrad N.O., Hrytsko R.Yu. Parasitic human diseases Helminth infections: educational textbook - Lviv, 2005. - 192.
8. Medical parasitology with entomology: educational manual / V.M. Goat, V.V. Carnivore,H.O. Solomennyk and others. 2015.336 p
9. Methodical recommendations to practical classes with of parasitology for preparation specialists d
10. The second (master's) equal higher education industry of knowledge "Protection health" specialty - 222 "Medicine". Lviv, 2021.

Additional:

1. Balakliets N. AND., Tsyganenko AND. I., Minukhin IN. IN. General microbiology. — Kharkiv, 2002.
2. Hudz S.P., Gnatush S.O., Beast G. AND. Sanitary microbiology. - Lviv : LNU named after AND. Frank ,2016.
3. Protchenko P. WITH. General microbiology, virology and immunology. Selected lectures: Educationmanual.—Odessa: Odessa honey. university, 2002.
4. Shirobokov V.P., Yankovsky D.S., Diamond H.S. Microbial ecology a person – K., 2009.
5. Shirobokov V.P. and others To stories development of microbiology in scientific and research and educationalinstitutions of Ukraine. – Kyiv, Book plus, 2006.
6. Review of Medical Microbiology and Immunology, 12 editions/ Warren E. Levinson / McGraw-Hill Prof Med.-Tech., 2012. – 688 p.
7. Jawetz, Melnick, & Adelberg's Medical Microbiology, 26th Edition, 2012, English. – 880 – ISBN-13: 978-0071790314

Informational resource

8. Introduction in course of parasitology. Organization working places Methods diagnostics.
9. URL: <https://www.youtube.com/watch?v=eBWftRYPxDI>.
10. <https://www.youtube.com/watch?v=WoIO-g1hiSo>
11. Tropical Parasitology: Protozoans, worms, Vectors and Human Diseases.
12. URL: <https://ru.coursera.org/learn/parasitology> .
13. <https://www.youtube.com/watch?v=dyprqPM1rHI>
14. <https://www.youtube.com/watch?v=x1ErCyZCFw8>
15. <https://www.youtube.com/watch?v=-EGTyu8nD34>
16. Atlas R. M. Principles of microbiology.-McGraw-Hill, Boston, Massachusetts, 2001
17. State service of Ukraine with extraordinary situations <http://www.dsns.gov.ua/>
18. World organization protection health <http://www.who.int/en/>
19. Microbiology and immunology online <http://www.microbiologybook.org/>
20. Online microbiology note <http://www.microbiologyinfo.com/>
21. Centers for diseases control and prevention www.cdc.gov

11. Equipment, material and technical and software software disciplines/ course

Access to network Internet

Panasonic multimedia interactive projector – available, commissioned in 2013p.

Televisions – 2 piece

Microscope luminescent LUMAM R-8

MBY-6 (900213) - no 1
Autoclave Drying cabinet
Refrigerators
Scales analytical VLR-200 - #1,
Thermostat TS-80 M - no 5
Dispensers 10-1000.0 mcl from 3 square meters
2016 r. - No 4, Dishes measured
Cultures cells with purpose demonstrations students viral reproductions
Environments for cultivation cultures cells (199, needle, solutions Versena, trypsin, aminopeptide)
fixed micropreparations clinical material for indications CPS of viruses Polystyrene tablets for serological settings reactions
Systems for express chromatography diagnostics viral infections (demonstration material)

12. Additional information

Practical classes and lectures are held by at the address: Lviv city, St. Zelena, 12.
Students are allowed to practice only in a medical gown, hat and change of shoes.

Responsible for the educational process at the department - Assoc. Shikula R.G. shykula.rg@gmail.com
Responsible by scientific circle department – Ass. Konechnyi Yu.T. yuliankonechnyi@gmail.com

Compiler of syllabus:

Pavliy S.J., Assoc. Prof., Ph.D.

(Signature)

Head of the department:

Korniychuk OP, prof., Ph.D.

(Signature)