



MINISTRY OF HEALTH OF UKRAINE  
NATIONAL PHARMACEUTICAL UNIVERSITY  
Department of Microbiology, Virology and Immunology

**EPIDEMIOLOGY OF DISEASES**

\_\_\_\_\_  
(name of the primary discipline)

**WORK PROGRAMM  
of educational component**

training for \_\_\_\_\_ second master's level  
(name of the rivnya vishoi osviti)  
in specialty \_\_\_\_\_ «226 Pharmacy and industrial pharmacy»  
(Code and Specialty Name)  
field of knowledge \_\_\_\_\_ «22 Health »  
(Code and Knowledge Field Name)  
of educational program \_\_\_\_\_ « Pharmacy »  
(Educational Program Name)  
in specialization(s) \_\_\_\_\_

Kharkiv-2022  
(year of creation)

The work program of the educational component Epidemiology of diseases in specialty 226 educational program “Pharmacy” in specialization(s) \_\_\_\_\_ for applicants for higher education 3 year of study.

EDUCATIONAL COURSE TEAM:

Filimonova Natalia Igorivna, Head of the Department of Microbiology, Vi-rology and Immunology, Doctor of Medical Sciences, Professor

Geyderikh Olga Grigoriivna, Associate Professor of the Department of Mi-crobiology, Virology and Immunology, Ph.D.

Tishchenko Iryina Yuriivna, Associate Professor of the Department of Mi-crobiology, Virology and Immunology, Ph.D.

(in the case of PIP authors, їхні settlements, scientific steps and those who call)

Work program has been considered and approved at the Department meeting

Record from «31» august 2022 № 1

Head of the Department \_\_\_\_\_



(sig.)

prof. Nataliia FILIMONOVA

(first name LAST NAME)

Educational program has been approved at the meeting of the Methodical Commission of biomedical disciplines

Record from «12» september 2022 № 1

Head of Specialized Committee \_\_\_\_\_



(sig.)

prof. Nadia KONONENKO

(first name LAST NAME)

## 1. Description of the educational component

**Language of study:** english

**Status of the educational component:** selective

**Prerequisites for studying the educational component:** Epidemiology of diseases as an educational discipline:

a) is based on studying students of philosophy, botany, biology with the basics of normal anatomy and physiology, pathophysiology, Latin language, microbiology, immunology and integrates with these disciplines;

b) laying the foundations for students to study pharmacology, clinical pharmacology, pharmacotherapy, laboratory diagnostics, hygiene, pharmacy technology of medicines, factory technology of medicines, toxicological chemistry, pharmacognosy, which involves the integration of teaching with these disciplines and the formation of skills to apply knowledge of Epidemiology of Diseases diseases in the process of further education and in professional activity.

The program of the educational discipline "Epidemiology of Diseases" is part of the main professional educational program in the specialty 226 "Pharmacy" for masters of pharmacy. The study of this discipline is necessary for qualified medical care, since knowledge about the etiological factors of infectious pathology, the mechanisms of their spread and anti-epidemic and prophylactic agents is one of the components of the pharmacist's work.

The subject of educational component study «Epidemiology of Diseases» is the formation of modern managerial thinking and a system of specialized knowledge in epidemiology. Formation of skills for the comprehensive planning of all preventive and epidemic measures.

**Information content of the educational component.** 3 ECTS credit 90 hours are assigned to the study of the educational component.

## 2. Objectives and tasks of the educational component

**The purpose of teaching the educational component** "Epidemiology of Diseases" is the acquisition of theoretical knowledge, skills and practical skills with an in-depth study of the role of biological and socio-economic factors in the development of the epidemic process; methods of epidemiological research

The main objectives of the discipline "Epidemiology of Diseases" is to study the legal issues of organizing preventive and anti-epidemic activities in the field of practical medicine, which will make it possible with a high probability to assess the quality and reliability of the results of preventive and anti-epidemic measures.

**The main tasks** of the educational component «Tropical infections» is the search and clarification of modern patterns of spread of tropical infectious diseases and damage to the human body in infectious diseases in tropical climates:

- study of the ways of spreading infectious diseases among different population groups,
- study of mechanisms and ways of interrupting the transmission of infectious diseases,
- study of the features of the clinical course of infectious diseases according to the stages of disease,
- prevention of complications infectious diseases,
- demonstration of understanding of the standards of care for infectious diseases,
- mastering the basic principles of care at the pre-hospital stage,
- familiarization with the main anti-epidemic measures,
- development of preventive measures.

### 3. Competence and planned educational outcomes

Educational component « Epidemiology of Diseases » ensures the acquisition of applicants for higher education the following **competences**:

*.special (professional):*

FC 1. Ability to carry out sanitary-educational work among the population with the purpose of prevention of widespread diseases, prevention of dangerous infectious, viral and parasitic diseases, and also to promote timely detection and maintenance of inclination to treatment of these diseases according to their medical-biological characteristics and microbiological features.

Integrative final program learning outcomes (PLO), the formation of which is facilitated by the educational component:

PLO 13. Conduct sanitary-educational work in professional activity in case of outbreak of flashes of infectious, viral and parasitic diseases.

As a result of studying the academic discipline, the applicant for education must *know*:

- • leading factors and patterns of the formation of the epidemic process,
- • the structure of the epidemic process, sources and methods of transmission of infectious agents,
- • regime-restrictive measures in identifying the focus of infection;
- • legislative documents regulating anti-epidemic work.
- • organization of anti-epidemic work in the foci of infections, provision of the population with effective immunobiological drugs.

*be able to::*

- • collect an epidemic history and conduct an epidemiological examination at the outbreak;
- • to carry out quality control of disinfectants and disinfection;
- • evaluate the effectiveness of sterilization.
- • to conduct epidemiological monitoring of diseases caused by pathogenic microorganisms.
- • solve situational tasks.

*possess:*

- • methods of statistical evaluation of the results of epidemiological studies;

### 4. The educational component structure

Names of content modules and topics	Volume in hours					
	Total	at that number				
		L	Sem	Pract lessons	Lab	Self-study
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
<b>Content module 1. General epidemiology</b>						
<b>Topic 1.</b> Introduction to Epidemiology. The subject and methods of epidemiology. Epidemiological surveillance of infectious diseases.	<b>5</b>	<b>1</b>		<b>2</b>		<b>2</b>
<b>Topic 2.</b> Epidemiological research	<b>4</b>	<b>1</b>		<b>1</b>		<b>2</b>
<b>Topic 3.</b> Methods and methods of disinfection, sterilization, disinsection and deratization.	<b>6</b>					<b>6</b>
<b>Topic 4.</b> Fundamentals of specific prophylaxis of infectious diseases. Vaccination calendar.	<b>5</b>			<b>1</b>		<b>4</b>

<b>Topic 5.</b> Vaccine quality criteria. Side effects of vaccines.	7	1		2		4
<b>Topic 6.</b> Sanitary protection of state borders against the importation of infectious diseases.	8	1		3		4
<b>Total</b>	<b>35</b>	<b>4</b>		<b>9</b>		<b>22</b>
<b>Content module 2. Special epidemiology</b>						
<b>Topic 7.</b> Epidemiological characteristics of zoonotic infections of bacterial etiology (anthrax, tularemia, campylobacteriosis). Preventive and anti-epidemic measures...	6	1		1		4
<b>Topic 8.</b> Epidemiological characteristics of intestinal infections of bacterial etiology (typhoid fever, salmonellosis). Preventive and anti-epidemic measures.	6	1		1		4
<b>Topic 9.</b> Epidemiological characteristics of intestinal infections of viral etiology (viral hepatitis A, poliomyelitis). Preventive and anti-epidemic measures....	7	-		1		6
<b>Topic 10.</b> Epidemiological characteristics of bacterial respiratory tract infections (diphtheria, meningococcal infection, whooping cough, scarlet fever). Preventive and anti-epidemic measures.	4	1		1		2
<b>Topic 11.</b> Epidemiological characteristics of respiratory tract infections of viral etiology (influenza, measles, rubella, chickenpox). Preventive and anti-epidemic measures.	8	-		2		6
<b>Topic 12.</b> Epidemiological characteristics of viral blood infections (AIDS, viral hepatitis B, C). Preventive and anti-epidemic measures.	5	1		1		3
<b>Topic 13.</b> Epidemiological characteristics of vector-borne infections (malaria, typhus). Preventive and anti-epidemic measures.	7	-		2		5
<b>Topic 14.</b> Epidemiological characteristics of bacterial infections with contact transmission mechanism (tetanus, syphilis, erysipelas). Preventive and anti-epidemic measures.	6	-		2		4
<b>Topic 15.</b> Epidemiological characteristics of hospital infections. The concept of quarantine infections. Preventive and anti-epidemic measures	6	1		1		4
<b>Total</b>	<b>55</b>	<b>5</b>		<b>12</b>		<b>38</b>
<b>Final modular control</b>						
<b>Total hours</b>	<b>90</b>	<b>9</b>		<b>21</b>		<b>60</b>

## 5. Contents of the educational component

### MODULE 1. Epidemiology of Diseases.

**Content module 1.** General epidemiology.

**Topic 1.** Introduction to Epidemiology. Subject and methods of epidemiology.

Introduction to Epidemiology. Fundamentals of the doctrine of epidemic and infectious processes. The regularity of the formation and manifestation of the epidemic process. Epidemic focus, its structure.

The concept of an infectious process and infectious diseases. Classification of infectious diseases. The main clinical manifestations of infectious diseases.

Epidemiological surveillance of infectious diseases. Medical aspects of infectious diseases. The main tasks of the state sanitary and epidemic supervision. Restricted measures: enhanced medical supervision, observation, quarantine. The purpose and objectives of epidemic surveillance. Surveillance sections.

**Topic 2.** Epidemiological studies.

Epidemiological method. Objectives of epidemiological research. The concept of prevalence rates of infectious diseases and incidence rates. Epidemiological Research Groups.

**Topic 3.** Methods and methods of disinfection, sterilization, disinsection and deratization.

Disinfection. Types of disinfection. Disinfection methods. Disinfectants. Sterilization. Sterilization methods. Sterilization and sterility control. Disinsection, definition, means and methods of its implementation. Deratization, definition, methods and methods of its implementation.

**Topic 4.** Fundamentals of specific prophylaxis of infectious diseases. Vaccination calendar.

Characterization of different types of vaccines. New principles of vaccine development. Immunological mechanisms of vaccine action. Expanded immunization program. Evaluation of the effectiveness of immunization. Side effects of vaccines. Reactions after vaccinations. Types and timing of adverse reactions. Post-vaccination complications. Sources and types of vaccine side effects. Indications and contraindications for vaccination.

**Topic 5.** Vaccine quality criteria.

General requirements for the quality of vaccines. Vaccine safety. Basics of transporting and storing vaccines. State system for assessing the safety of vaccines. Vaccine quality surveillance. WHO's focus on vaccine quality and safety.

**Topic 6.** Sanitary protection of state borders against the importation of infectious diseases. International system for the prevention of the import of infectious diseases. Concept of International Health Regulations. Special requirements for the prevention of the importation of especially dangerous infectious diseases.

**Topic 7.** Epidemiological characteristics of zoonotic infections of bacterial etiology (anthrax, tularemia, campylobacteriosis). Preventive and anti-epidemic measures ..

**Topic 8...** Epidemiological characteristics of intestinal infections of bacterial etiology (typhoid fever, salmonellosis). Preventive and anti-epidemic measures.

**Topic 9...** Epidemiological characteristics of intestinal infections of viral etiology (hepatitis A, E, poliomyelitis). Preventive and anti-epidemic measures.

**Topic 10.** Epidemiological characteristics of bacterial respiratory tract infections (diphtheria, meningococcal infection, whooping cough, scarlet fever). Preventive and anti-epidemic measures.

**Topic 11.** Epidemiological characteristics of respiratory tract infections of viral etiology (influenza, measles, rubella, chickenpox). Preventive and anti-epidemic measures.

**Topic 12...** Epidemiological characteristics of viral blood infections (AIDS, hepatitis B, C). Preventive and anti-epidemic measures.

**Topic 13.** Epidemiological characteristics of vector-borne infections (malaria, typhus). Preventive and anti-epidemic measures.

**Topic 14.** Epidemiological characteristics of infections with a contact mechanism of transmission of bacterial etiology (tetanus, syphilis). Preventive and anti-epidemic measures.

**Topic 15...** Epidemiological characteristics of hospital infections. The concept of quarantine infection.

**Semester module supervision \_ semester credit.**

## 6. Topics of lectures

No.	Name of topic	The amount of hours
		full time study

1	Introduction to Epidemiology. Subject and methods of epidemiology. Epidemiological surveillance of infectious diseases.	1
2.	Epidemiological research	1
3	Vaccine quality criteria. Side effects of vaccines.	1
4	Sanitary protection of state borders against the importation of infectious diseases.	1
5	Epidemiological characteristics of zoonotic infections of bacterial etiology (anthrax, tularemia, campylobacteriosis). Preventive and anti-epidemic measures.	1
6	Epidemiological characteristics of intestinal infections of bacterial etiology (typhoid fever, salmonellosis). Preventive and anti-epidemic measures.	1
7	Epidemiological characteristics of bacterial respiratory tract infections (diphtheria, meningococcal infection, whooping cough, scarlet fever). Preventive and anti-epidemic measures.	1
8	Epidemiological characteristics of viral blood infections (AIDS, hepatitis B, C). Preventive and anti-epidemic measures.	1
9	Epidemiological characteristics of hospital infections. The concept of quarantine infections. Preventive and anti-epidemic measures	1
<b>Total hours</b>		<b>9</b>

### 7. Topics of practical lessons

No.	Name of topic	The amount of hours
		full time study
1	Introduction to Epidemiology. Subject and methods of epidemiology. Epidemiological surveillance of infectious diseases.	2
2.	Epidemiological research	1
3.	Fundamentals of specific prophylaxis of infectious diseases. Vaccination calendar	1
4.	Vaccine quality criteria. Side effects of vaccines.	2
5	Sanitary protection of state borders against the importation of infectious diseases.	3
6	Epidemiological characteristics of zoonotic infections of bacterial etiology (anthrax, tularemia, campylobacteriosis). Preventive and antiepidemic measures.	1
7	Epidemiological characteristics of intestinal infections of bacterial etiology (typhoid fever, salmonellosis). Preventive and antiepidemic measures.	1
8	Epidemiological characteristics of intestinal infections of viral etiology (hepatitis A, poliomyelitis). Preventive and antiepidemic measures.	1
9	Epidemiological characteristics of bacterial respiratory tract infections (diphtheria, meningococcal infection, whooping cough, scarlet fever). Preventive and antiepidemic measures.	1
10	Epidemiological characteristics of respiratory tract infections of viral etiology (influenza, measles, rubella, chickenpox). Preventive and antiepidemic measures.	2
11	Epidemiological characteristics of viral blood infections (AIDS, hepatitis B, C). Preventive and anti-epidemic measures.	1
12	Epidemiological characteristics of vector-borne infections (malaria, typhus). Preventive and anti-epidemic measures.	2
13	Epidemiological characteristics of infections with a contact mechanism of transmission of bacterial etiology (tetanus, syphilis). Preventive and anti-epidemic measures.	2
14	Epidemiological characteristics of hospital infections. The concept of quarantine infections. Preventive and anti-epidemic measures	1
<b>Credit</b>		
<b>Total hours</b>		<b>21</b>

## 5. Self-study work

No.	Name of topic	The amount of hours
		full time study
1	Introduction to Epidemiology. The subject and methods of epidemiology. Epidemiological surveillance of infectious diseases.	2
2	Epidemiological research	2
3	Methods and means of disinfection, sterilization, disinsection and deratization.	6
4	Fundamentals of specific prophylaxis of infectious diseases. Vaccination calendar.	4
5	Vaccine quality criteria. Side effects of vaccines.	4
6.	Sanitary protection of state borders against the importation of infectious diseases.	4
7.	Epidemiological characteristics of zoonotic infections of bacterial etiology (anthrax, tularemia, campylobacteriosis). Preventive and anti-epidemic measures.	4
8.	Epidemiological characteristics of intestinal infections of bacterial etiology (typhoid fever, salmonellosis). Preventive and anti-epidemic measures.	4
9.	Epidemiological characteristics of intestinal infections of viral etiology (hepatitis A, poliomyelitis). Preventive and anti-epidemic measures.	6
10.	Epidemiological characteristics of bacterial respiratory tract infections (diphtheria, meningococcal infection, whooping cough, scarlet fever). Preventive and anti-epidemic measures.	2
11.	Epidemiological characteristics of respiratory tract infections of viral etiology (influenza, measles, rubella, chickenpox). Preventive and anti-epidemic measures.	6
12.	Epidemiological characteristics of viral blood infections (AIDS, hepatitis B, C). Preventive and anti-epidemic measures.	3
13.	Epidemiological characteristics of vector-borne infections (malaria, typhus). Preventive and anti-epidemic measures.	5
14.	Epidemiological characteristics of infections with a contact mechanism of transmission of bacterial etiology (tetanus, syphilis). Preventive and anti-epidemic measures.	4
15.	Epidemiological characteristics of hospital infections. The concept of quarantine infections. Preventive and anti-epidemic measures	4
	<b>Total hours</b>	<b>60</b>

### Tasks for Self-study work

1. Drawing up a synopsis on the topic.
2. Solving situational tasks.
3. Solving test tasks.
4. Preparation of abstracts
5. Individual tasks are performed in the form of writing students' research work on the subject of the discipline being studied within each content module...



## 6. Criteria and evaluation order of educational outcomes

### 1. Evaluation system for the educational component

The success of the applicant for higher education in the semester (module) is evaluated on a 100-point scale, which consists of the current control of theoretical, practical training at each lesson, independent work, the results of content module controls.

Points from the educational component are awarded according to the ratio given in Table 1.

Points from the educational component are awarded according to the following ratio

Table 1.

Types of assessment	Maximum number of points (% of the number of points per module - for content modules)
<b>MODULE 1</b>	
Content module 1: General epidemiology - Assessment of topics (1-6) (work in classes 1-6): work in classes (oral questioning, test tasks); - control of content module 1 (test tasks, oral questioning).	50 (50 %)
Content module 2: Special epidemiology. - Assessment of topics (7-15) (work in classes 7-15): work in classes (oral questioning, test tasks); - control of content module 2 (test tasks, oral questioning).	50 (50 %)
Semester control of module 1	100

The maximum number of points assigned to higher education students for mastering a module (credit) is 100, including for current learning activities (conducted at each practical lesson, including control of theoretical knowledge, practical skills) and the results of control of mastering content modules.

The minimum number of points assigned to higher education applicants for mastering the module (credit) is 60, including for current learning activities (conducted at each practical lesson, including control of theoretical knowledge, practical skills) and the results of control of mastering content modules.

When assessing the knowledge of higher education students, preference is given to a standardized method of control - oral questioning, written questioning, testing and control of practical skills.

Applicants for higher education have the opportunity to receive incentive (additional) points (up to 10 points):

participation in the Republican Student Olympiad - 10 points;

participation in the university student scientific conference - 8 points;

participation in the departmental stage of the student scientific conference - 6 points;

publication of scientific works - 10 points;

writing essays - 1-4 points;

preparation of illustrative material (multimedia presentation, sets of tables, diagrams) - 1-4 points.

**The current control rating** is calculated on a cumulative basis.

Depending on the curriculum of the current academic year, the number of classes per semester may vary, but the overall rating is in accordance with the ECTS scale.

At the practical class, the assessment of higher education students is made according to the criteria given in Table 2.

Table 2.

### Criteria for evaluating the results of learning activities in practical classes

Scale	Criteria	Evaluation of the lesson in points, min - max
"5" excellent 90-100%	Tasks for independent preparation for the lesson are completed correctly and in full. Answers to theoretical questions on the topic of the lesson are given correctly and clearly. Practical tasks during classroom work are completed	9,0-10,0

	correctly and in full.	
<b>"4"</b> <b>very good</b> <b>82-89%</b>	Tasks for self-preparation for the class are completed correctly and in full. Answers to theoretical questions on the topic of the class are provided in full with minor deviations. Practical tasks during classroom work are performed with minor deviations.	8,2-8,9
<b>"4-"</b> <b>good</b> <b>74-81%</b>	Tasks for self-preparation for the class are performed with minor errors. Answers to theoretical questions on the topic of the class are incomplete with inaccuracies. Practical tasks during classroom work are performed with minor deviations.	7,4-8,1
<b>"3"</b> <b>Satisfactory</b> <b>64-73%</b>	Tasks for self-preparation for the class are performed with significant errors. Answers to theoretical questions on the topic of the class are provided incompletely or with significant errors. Practical tasks during classroom work are performed with significant deviations.	6,4-7,3
<b>"3-"</b> <b>enough</b> <b>60-63%</b>	Tasks for independent preparation for the class are partially completed and with significant errors. Answers to theoretical questions on the topic of the class are incomplete with significant errors. Practical tasks during classroom work are partially completed with significant deviations.	6,0-6,3
<b>"2"</b> <b>Unsatisfactory</b> <b>0-59%</b>	Tasks for independent preparation for the class are not completed or completed incorrectly. Answers to theoretical questions on the topic of the class are not provided. Practical tasks during classroom work are not completed or completed incorrectly.	0-5,9

**The control of mastering the content modules (CM)** is carried out at the last practical lesson of studying the topics of CM. Only those applicants for higher education who have completed all types of work provided by the curriculum, worked out the missed practical classes are allowed to control the CM. The means of diagnosing the level of training of higher education applicants are testing, theoretical oral or written questioning. The result of control of mastering the content module is set according to the criteria given in Table 3.

Table 3.

#### Criteria for evaluating the results of control of content modules

	Evaluation in points, min - max	Criteria		
		Passing test tasks	Answer to the question	Solving the situational problem
Control CM 1, CM 2	9-15	6-10	3-5	-

The structure of the ticket for the control of the content modules includes 30 test tasks, questions (WP 1, WP 2) or a situational task (WP 3, WP 4).

**Semester control** is carried out in the form of a semester test and a semester exam on the educational component in the amount of educational material determined by the work program and in the terms established by the curriculum.

The results of semester control in the form of a semester test are evaluated on a 100-point, non-

differentiated scale ("passed", "not passed") and on the ECTS scale.

A higher education applicant is considered admitted to semester control if he has worked all the classroom classes provided by the work program for the educational component, has completed all the types of work provided by the work program for the educational component.

A higher education applicant receives a credit at the last lesson of the educational component based on the results of the current assessment. This type of final control does not provide any additional work, surveys or testing at the last lesson.

The final grade for the educational component for the semester is the final semester grade, which consists of the points of the current control.

Grades A, B, C, D, E are assigned only to higher education students who have enrolled in the educational component.

The structure of the ticket for the control of the content modules includes 30 test tasks, questions.

Semester control is carried out in the form of a semester test on the educational component in the amount of educational material determined by the work program and in the terms established by the curriculum.

The results of semester control in the form of a semester test are evaluated on a 100-point, non-differentiated scale ("passed", "not passed") and on the ECTS scale.

A higher education applicant is considered admitted to semester control if he has worked all the classroom classes provided by the work program for the educational component, has completed all the types of work provided by the work program for the educational component.

A higher education applicant receives a credit at the last lesson of the educational component based on the results of the current assessment. This type of final control does not provide any additional work, surveys or testing at the last lesson.

The final grade for the educational component for the semester is the final semester grade, which consists of the points of the current control.

Grades A, B, C, D, E are assigned only to higher education students who have enrolled in the educational component.

The FX grade corresponds to "unsatisfactory" ("not enrolled") and the student may be admitted to the semester control subject to certain additional work.

They have the right to repeat the test during the winter holidays and within 2 (additional) weeks after the end of the spring semester according to the schedule approved by the rector.

Applicants for higher education who received a grade of F, which corresponds to "unsatisfactory" ("not enrolled") must re-study the educational component.

Table 5.

**Transformation of the national grading scale into the ECTS system (European Community Course Credit Transfer System. European Community Course Credit Transfer System)**

Sum of points for all types of educational activities		Evaluation on the national scale
90-100	A	excellent
82-89	B	good
74-81	C	
64-73	D	
60-63	E	satisfactory
35-59	FX	unsatisfactory with the possibility of retaking
1-34	F	unsatisfactory with mandatory re-study of the discipline

## Scoring scheme and points distribution

Distribution of points for module 1

Current testing and independent study												Total
Content module 1						Content module 2						
T1	T2	T3	T4	T5	T6	CCM 1	T7	T8	T9	T10	CCM 2	
10	-	10	10	-	-	15	10	10	10	10	15	100

## 10. Forms of progress and semester supervision of academic achievements

**Form of control** - semester credit.

**Current control** is carried out systematically during the semester during practical classes and is evaluated by the amount of points gained for the assessment of theoretical knowledge, practical skills and independent work of the applicant for higher education, as well as control of content modules, and is conducted during classroom classes. Current control is mandatory, the knowledge of higher education students is assessed at each lesson (on each topic).

**Control of practical work** is carried out at each practical lesson in accordance with specific goals. It includes oral questioning, individual interview, testing, evaluation of practical tasks.

**Control of independent work** assesses the level of knowledge that higher education students acquire independently during self-preparation for classes, as well as working through the list of questions included in certain modules. Independent work of higher education students is evaluated during the current control and during the content module.

**Semester control** is carried out in the form of a semester test and a semester exam on the educational component in the amount of educational material determined by the work program and in the terms established by the curriculum.

A higher education applicant is considered admitted to semester control if he has worked all the classroom classes provided by the work program for the educational component, has completed all the types of work provided by the work program for the educational component.

A higher education applicant receives a credit at the last lesson of the educational component based on the results of the current assessment. This type of final control does not provide any additional work, surveys or testing at the last lesson.

Credit is given to applicants for higher education who have scored the required minimum number of points during the current control (60 points and above), have no unexcused absences from practical classes and have fulfilled all the requirements provided by the work program of the educational component.

## 11. Methodological support

1. Basic lecture notes.
2. Methodical materials of computer presentations of lectures.
3. Study guide.
4. Methodical recommendations for seminars and independent work of students.
5. Task for current and final control.
6. Base of test items.
7. Tasks for independent work of students.

8. Tasks for complex test work.

9. Methodological materials for independent work of students, posted on the website of the Center for Distance Learning Technologies of NUPh.

## 12. Reading suggestions

### The main reading suggestions

1. Vynograd, N. O. General Epidemiology [Текст] : study guide for students of higher medical education institutions of the 3-4 levels of accreditation (rec. MESU №1/11-7780 of 13.08/2010) / N. O. Vynograd ; 2-edition, corrected. - К. : AUS Medicine Publishing, 2016. - 128 p. Б
2. <https://www.cdc.gov/csels/dsepd/ss1978/ss1978.pdf> Principles of Epidemiology in Public Health Practice, Third Edition: An Introduction

### Supplementary reading suggestions

1. Basic epidemiology / R. Bonita, R. Beaglehole, T. Kjellström. 2nd edition. WHO Library Cataloguing-in-Publication Data Bonita, Ruth 1. Epidemiology. 2. Manuals. I. Beaglehole, Robert. II. Kjellström, Tord. III. World Health Organization - 226 p
2. GORDIS EPIDEMIOLOGY, SIXTH EDITION, 2019. – 434 p.

## 13. Electronic resources, including the Internet

1. Department of Microbiology, Virology and Immunology of NUPh. <https://pharmel.kharkiv.edu/moodle/course/view.php?id=3735>
2. Scientific library of NUPh. <http://lib.nuph.edu.ua>
3. <https://www.cdc.gov/epiinfo/> Epi Infotm
4. <https://www.cdc.gov/genomics/hugenet/> Epidemiology
5. <https://www.cdc.gov/csels/dsepd/ss1978/lesson1/> Principles of Epidemiology