

**MINISTRY OF HEALTH PROTECTION OF UKRAINE**  
**ODESSA NATIONAL MEDICAL UNIVERSITY**  
 Department of general and clinical epidemiology and biosafety

**Syllabus of the academic discipline**  
 "Especially dangerous infections. The concept of biosafety"

<b>Scope of the academic discipline</b>	Total hours per discipline: 90 hours, 3.0 credits Semesters: XI-XII 5th year of study
<b>Days, time, place of training disciplines</b>	Days and time - according to the class schedule Department of general and clinical of epidemiology and biosafety, str. Primorsky Boulevard, 13
<b>Teacher(s)</b>	Golubyatnikov M.I., doctor of medicine, professor, head of the department. Professors: Doctor of Medicine Bachynska O.V., Doctor of Medicine. A. I. Savchuk, Doctor of Medicine. K.O. Talalaev, Doctor of Medicine. Haidey V.R. Associate professors: Servetskyi S.K., Fedorenko T.V. Assistants: T.V. Gerasimenko, G.M. Jurtubaeva, O.A. Melnyk, K.S. Hrytsenko, L.V. Kostolonova, M.O. Makarenko.
<b>Contact Information</b>	Help by phone: Melnyk O.A., phone - 0965920621, responsible for organizational and educational work of the department phone Gavrushko T.G., laboratory assistant of the department; phone number - 0681241260 <a href="mailto:olena.kozishkurt@onmedu.edu.ua">olena.kozishkurt@onmedu.edu.ua</a> Face-to-face consultations: from 2:00 p.m. to 5:00 p.m. every Thursday, from 9:00 a.m. to 2:00 p.m. every Saturday Online consultations: from 4:00 p.m. to 6:00 p.m. every Thursday, from 9:00 a.m. to 2:00 p.m. every Saturday. The link to the online consultation is provided to each group during classes separately.

### COMMUNICATION

Classes are held at the department, according to the schedule.

Communication with applicants will be conducted in the classroom (face-to-face).

During distance learning, communication is carried out through the Microsoft Teams platform, as well as through e-mail correspondence, Viber messengers (through groups created in Viber for each group, separately through the head of the group).

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**ABSTRACT OF THE EDUCATIONAL DISCIPLINE**

*The subject of study of the discipline* there are: peculiarities of the organization and implementation of preventive and anti-epidemic measures in centers (outbreaks, during outbreaks) of particularly dangerous infections, anti-epidemic measures for the patient, contact persons, the territory, provision of medical assistance to the population.

*Prerequisites and postrequisites of the discipline:*

*Prerequisites:* Ukrainian language (by professional direction), foreign language (by professional direction), Latin language and medical terminology, medical biology, medical and biological physics, biological and bioorganic chemistry, human anatomy, histology, cytology and embryology, physiology, microbiology, virology and immunology, life safety; basics of bioethics and biosafety, pathomorphology, pathophysiology, pharmacology, propaedeutics of pediatrics, medical psychology, otorhinolaryngology, ophthalmology, neurology, psychiatry, narcology, dermatology, venereology, basics of public health, organization of health care, informatization in the field of public health, clinical medicine and the environment, prevention, valeology.

*Post-requisites:* pediatrics, internal medicine, surgery, obstetrics and gynecology, infectious diseases, epidemiology and principles of evidence-based medicine, oncology and radiation medicine, traumatology and orthopedics, phthysiology, anesthesiology and intensive care, emergency and emergency medical care, hygiene and ecology, palliative and hospice medicine, general practice (family medicine).

*The purpose of teaching disciplines* is the formation of students of modern thinking and understanding of the need to acquire special knowledge, abilities and skills on various issues, including diagnostics, treatment, methods of their prevention and the organization of anti-epidemic measures.

*Tasks of the discipline:*

1. Familiarization with the main anti-epidemic measures for particularly dangerous infectious diseases
2. Mastering the ability to identify ways of spreading particularly dangerous infectious diseases among different population groups, in particular risk groups
3. Formation of abilities and skills of organization and implementation of anti-epidemic measures in centers of particularly dangerous infectious diseases.
4. Familiarization with the prevention of particularly dangerous infectious diseases,
5. Research on measures to interrupt the spread of particularly dangerous infectious diseases.

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6. Understanding standards granting help sick with especially dangerous infectious diseases.

*Expected learning outcomes.*

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

*Know:*

- concepts of "infection", "infectious process", "infectious disease", "socially significant infectious diseases", "particularly dangerous infectious diseases", "biological weapons", "biosecurity", "bioterrorism", International medical and sanitary regulations, International Convention on Quarantine Diseases;
- signs of infectious diseases, their features, forms, periods, risk factors, conditions of occurrence;
- source of infection, ways of transmission, mechanism of infection of infectious diseases;
- methods of diagnosing infectious diseases;
- basic principles and directions of treatment of infectious diseases;
- etiology, epidemiology, pathogenesis, classification, clinical signs, complications, modern methods of diagnosis, differential diagnosis, prevention, principles, methods and means of treatment of particularly dangerous infections (cholera, plague, yellow fever and other viral hemorrhagic fevers);
- tactics of medical personnel in case of particularly dangerous infections;
- preventive and anti-epidemic measures for particularly dangerous infectious diseases;
- peculiarities of the organization of medical care for patients with particularly dangerous infections;
- main governing documents on the sanitary and anti-epidemic regime in medical and preventive institutions;
- manifestations of the epidemic process;
- the procedure for carrying out activities related to the detection, examination, monitoring, localization and elimination of an epidemic center;

*Be able:*

- organize and to spend anti-epidemic activities in cells infectious diseases.
- to organize and carry out anti-epidemic measures in centers of infections related to the provision of medical care.
- interpret the results of using the epidemiological research method in practice.
- interpret epidemiological, social and economic significance individual nosological forms.
- to fill documentation of registration and accounting infectious patients
- to determine and interpret the epidemiological manifestations of the incidence of

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infections belonging to different groups (respiratory, intestinal, transmissible, and infections of external covers).

- use regulatory and instructional documentation of the Ministry of Health of Ukraine and international standards to eliminate foci of specific nosological forms belonging to various groups of infectious diseases (respiratory, intestinal, transmissible and external integuments, ONI).

- to interpret the regularities and features of the course of the epidemic process in infectious diseases that require special tactics.

- interpret the concepts of "infection", "infectious process", "infectious disease", "socially significant infectious diseases", "particularly dangerous infectious diseases", "biological weapons", "biosecurity", "bioterrorism", International Health and Sanitary Regulations, International the Convention on Quarantine Diseases;

- demonstrate the skills of clinical and laboratory diagnosis of the most common, particularly dangerous infectious diseases and their complications;

- carry out differential diagnosis of the most common particularly dangerous infectious diseases and their complications;

- determine the tactics of hospitalization and isolation of patients with the most common and especially dangerous infectious diseases;

- to plan basic preventive measures against particularly dangerous infectious diseases;

- predict the consequences of particularly dangerous infectious diseases for human health;

- to recognize typical symptoms of the most common and particularly dangerous infectious diseases;

*Master the skills:*

- formulation of working hypotheses regarding the risk factors of morbidity in individual territories, among different population groups and in collectives regarding specific infectious diseases.

- determination of priority problems of prevention of infectious diseases by groups and nosological forms.

### **DESCRIPTION OF THE EDUCATIONAL DISCIPLINE**

The discipline will be taught in the form of practical (30 classroom hours) and; organization of the applicant's independent work (60 hours).

*Teaching methods:* conversation, role-playing games, solving clinical situational problems, practicing the skills of developing anti-epidemic measures in the focus of a particularly dangerous infectious disease, practicing the skills of working with medical documentation, regulatory documents, preventive work, epidemiological investigation of cases of particularly dangerous infectious diseases in the territory.

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*Content of the academic discipline*

*Topic 1. The role of infectious diseases in modern society. Infectious diseases (INDs) are especially dangerous. General epidemiological characteristics of ONI. Modern ideas about THEM. The structure of parasitic systems. The structure of the epidemic process. Manifestations of the epidemic process. Features of preventive and anti-epidemic measures.*

*Topic 2. International medical and sanitary regulations. International Convention on Quarantine Diseases. The concept of conventional (quarantine) and ONI. Modern classifications. Notification system, information transmission channels (Weekly epidemiology review (WER). Epidemiological supervision of ONI. International medical and sanitary regulations (2005). Division of diseases into two groups (appendix No. 2 of the MMSP-2005). International Convention on Quarantine Diseases. Regulating documents.*

*Topic 3. Cholera. Historical reference. Etiological characteristics of the causative agent, persistence in the environment, epidemiology of cholera (source of infection, incubation period, groups of vibriocarriers, mechanism of transmission, ways of spreading, seasonality, susceptibility, susceptibility factors, immunity). Conditions for discharge from the hospital. Preventive and anti-epidemic measures. The concept of an emergency anti-epidemic commission, an operational plan for the localization and elimination of a cholera outbreak. Anti-epidemic measures in the epidemic center regarding the patient, contact persons, regarding the situation. Types of hospitals deployed during a cholera outbreak (cholera, provisional, observational). Medical tactics when identifying a cholera patient. Emergency notification.*

*Topic 4. Plague. Historical reference. Etiology of the pathogen. Epidemiology (source of infection, vectors of the pathogen, reservoir, mechanisms of transmission, susceptibility, entry gate, contagiousness, seasonality, immunity, incubation period, contagious period). Pathogenesis, clinical course, classification by clinical forms, methods of laboratory diagnostics. Differential diagnosis. Treatment. The procedure for discharge from a hospital. Preventive and anti-epidemic measures. The concept of an emergency anti-epidemic commission, an operational plan for the localization and elimination of the outbreak. Anti-epidemic measures in the epidemic center regarding the patient (type of hospitalization, type of disinfection, criteria for discharge from the hospital, dispensation), emergency notification, regarding contact persons, emergency prevention of plague, regarding the situation. Preventive measures to combat the plague are non-specific, risk groups. Disinsection, deratization. Introduction of quarantine. Specific prevention of plague.*

*Topic 5. Yellow fever. Etiology, epidemiology, pathogenesis, clinical course, methods of laboratory diagnostics. Differential diagnosis. Treatment. The procedure for discharge from a hospital. Preventive and anti-epidemic measures. Anti-epidemic measures in the epidemic center regarding the patient,*



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contact persons, regarding the situation. Specific prevention.

*Topic 6. Hemorrhagic fevers (Ebola, Marburg, Lassa).* Etiology, epidemiology, pathogenesis, clinical course, methods of laboratory diagnostics. Differential diagnosis. Treatment. The procedure for discharge from a hospital. Preventive and anti-epidemic measures. Anti-epidemic measures in the epidemic center regarding the patient, contact persons, regarding the situation.

*Topic 7. Anthrax.* Historical reference. Etiological characteristics of the causative agent. Virulence factors. Bacillus anthracis as a weapon and for bioterrorism. Pathogenesis. Clinical forms. Forecast. Treatment. Diagnostics. Specific prevention for persons at risk, post contact prevention.

*Topic 8. Tularemia.* Historical reference. Etiological characteristics of the causative agent. Stability in the environment. Use of Francisella tularensis as a weapon and for bioterrorism. Epidemiology. Mechanism of transmission, ways of infection. Incubation period. Anti-epidemic measures in the epidemic center regarding the patient (type of hospitalization, type of disinfection, criteria for discharge from the hospital, dispensation), emergency notification, regarding contact persons, regarding the situation. Preventive measures to combat tularemia (specific, non-specific, risk groups). Disinsection, deratization.

*Topic 9. Monkey pox.* Historical reference. Etiological characteristics of the causative agent. Epidemiology (main reservoirs of the pathogen, incubation period, mechanism of transmission, routes of infection, susceptibility, entry gates). Clinical manifestations, mortality and prognosis. Laboratory diagnostics. Treatment. Prevention.

*Topic 10. Rabies.* Etiological characteristics of the causative agent. Epidemiology. Natural and anthropogenic centers. The main reservoirs of the pathogen, incubation period, mechanisms of transmission, routes of infection, susceptibility, entrance gate, type of hospitalization). Clinic. Diagnostics. Treatment. Prevention and measures in the cell. Measures for the patient (type of hospitalization), emergency prevention of rabies. Vaccination according to conditional and unconditional indications. Guidelines for the use of antirabies drugs.

*Topic 11 Ornithosis.* Etiological characteristics of the causative agent. Natural centers, main reservoirs of the pathogen, incubation period, mechanism of transmission, ways of spreading, risk groups, entry gates. Clinic, diagnosis, treatment. Prevention. Sanitary and veterinary measures.

*Topic 12. Typhoid fever. Brill's disease.* Etiological characteristics of the causative agent. Epidemiology. The source of the pathogen. Incubation period, contagious period, mechanism of transmission, ways of infection, seasonality, susceptibility, risk groups. Clinic, complications. Diagnostics. Differential diagnosis. Treatment. Prevention and measures in the cell.

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Measures for the patient (type of hospitalization), for contact persons (observation period, examination, laboratory examination. Prevention (specific and non-specific).

*Topic 13. Biosafety and bioprotection: current state in Ukraine and the world.* Definition of the concepts of biological risk, biosafety, bioprotection, their constituent parts. Biosafety and bioprotection: subject, purpose and tasks in the system of public health protection.

*Topic 14. Peculiarities of taking measures to prevent biological risks and threats in cases of emergencies and under conditions of introduction of infections of international importance.* Medical and non-medical forces and means to prevent biological risks and threats in the public health system.

*Topic 15. Basic concepts of bioterrorism.* The history of the use of biological agents against humans. Use of biological agents for terrorist and sabotage purposes. Bioagents are especially dangerous for humans. Dangers associated with synthetic biology. Biological weapons and international regimes of their prohibition. Geneva Protocol. Convention on the Prohibition of Biological Weapons. Test.

*List of recommended literature:*

*Main:*

1. Infectious diseases: textbook / O.A. Golubovska, M.A. Andreychyn, A.V. Shkurba and others; under the editorship O.A. Golubovska - 2nd ed., revised. and added - K.: VSV "Medicine", 2018. - 688 p.
2. Infectious diseases: textbook / V.M. Kozko, G.O. Solomennyk, K.V. Yurko and others; under the editorship V.M. goat - K.: VSV "Medicine", 2019. - 312 p.
3. Tropical diseases: education. manual / V.M. Kozko, G.O. Solomennyk, K.V. Yurko - K.: VSV "Medicine", 2019. - 384 p.
4. Holovatsky O.O. Bioterrorism: features and tactics of countermeasures / O.O. Holovatskyi // Southern Ukrainian legal journal. – 2016. – No. 1. – pp. 18–20.
5. Harrison's Principles of Internal Medicine. – 19th Edition // Dan Longo, Anthony Fauci, Dennis Kasper, Stephen Hauser. - McGraw-Hill, 2015.
6. Myronyuk B.V. Biological weapons, measures and means of their use. Characteristics of the center of biological damage. [Electronic resource] / B. V. Myronyuk. – 2018. – Mode of access to the resource: <https://disted.edu.vn.ua/courses/learn/1460>.
7. Law of Ukraine dated April 6, 2000 No. 1645-III (Current) "On the Protection of the Population from Infectious Diseases", version dated November 17, 2021. <https://ips.ligazakon.net/document/T001645?an=287>
8. Bilokon S. V. Fundamentals of bioethics and biosafety / S. V. Bilokon. - About: ONU, 2017. - 155 p

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*Additional:*

1. WHO's Global Malaria Program [Electronic resource] / WHO, 2010. - Access mode: [http:// www.who.int/malaria/about\\_us/ru/index.html](http://www.who.int/malaria/about_us/ru/index.html)
2. Order of the Ministry of Health of Ukraine dated March 12, 2007 No. 113 "On the approval of the Methodological Guidelines for planning measures to prevent the introduction and spread of dangerous infectious diseases in Ukraine."
3. Order of the Ministry of Health of Ukraine dated 19.07.95 No. 113 "On approval of the List of particularly dangerous, dangerous infectious and parasitic human diseases and carriers causative agents these diseases".  
<https://zakon.rada.gov.ua/rada/show/v0133282-95/sp:max50:nav7:font2#Text>
4. Resolution Ministry of Health of Ukraine, State sanitary service and The main state sanitary doctor of Ukraine from 12.05.2003 No 16. pp. 4.2.1 Methodical instructions "Organization and carrying out primary measures at detection the patient (troupe) or suspicions on infection quarantined infections, contagious viral hemorrhagic fevers and other dangerous ones infectious diseases unclear etiology".
5. International medical and sanitary rules 2005 p. (MSME -2005).

Links to information resources on the Internet, video lectures, other methodical support

<http://www.rada.gov.ua>

<http://www.menr.gov.ua>

<http://ec.europa.eu/environment/iczm/home.htm>

<http://www.unesco.org/csi/act/russia/leaflet.pdf>

[http://ec.europa.eu/agriculture/rurdev/index\\_en.htm](http://ec.europa.eu/agriculture/rurdev/index_en.htm)

[http://ec.europa.eu/environment/air/quality/legislation/existing\\_leg.htm](http://ec.europa.eu/environment/air/quality/legislation/existing_leg.htm)

<http://rod.eionet.europa.eu/instruments/274>

<http://ec.europa.eu/environment/urban/links.htm>

## **EVALUATION**

*Forms and methods of current control:* oral (survey), practical (solving clinical situational problems, practicing the skills of developing anti-epidemic measures in an outbreak of an infectious disease, practicing the skills of working with medical documentation (357/o, 058/o), regulatory documents, preventive work, epidemiological investigation of infectious disease cases in organized teams).

*Current evaluation criteria in practical training*

Perfectly "5"	It is presented to the applicant when he shows deep, solid and systematic knowledge in the scope of the curriculum, answers all questions without mistakes, reasonably formulates conclusions, using materials presented for independent work of the applicant, competently and consistently, with knowledge of the methodology, completed practical work ; right using scientific terms and concepts.
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Fine "4"	The acquirer reveals the main content of the educational material; gives incomplete definitions of concepts; allows inaccuracies when using scientific terms, vaguely formulates conclusions, performed the practical work, but made minor mistakes during the research.
Satisfactorily "3"	The applicant reproduces the basic educational material, but makes significant mistakes when presenting it, gives simple examples, definitions of concepts are insufficient, characterizes general issues of social medicine.
Unsatisfactorily "2"	The applicant discloses the content of the educational material fragmentarily, makes gross mistakes in the definition of concepts and when using terminology, did not complete the practical work.

*Forms and methods of final control:* Credit is awarded to an applicant who has completed all sections of the educational program of the elective discipline, has actively participated in seminars, has a current grade point average of at least 3.0, and has no academic debt.

*The possibility and conditions of obtaining additional (bonus) points:* not provided.

## INDEPENDENT WORK OF HIGHER EDUCATION ACQUIRES

Independent work provides preparation to Each practical occupation.

## EDUCATIONAL DISCIPLINE POLICY

*Deadlines and Rescheduling Policy:*

- Absences of classes for non-respectable reasons will be worked out according to the schedule of the teacher on duty.
- skips with respectable reasons working out by individual schedule with the permission of the dean's office.

*Academic Integrity Policy:*

Observance of academic integrity by applicants is mandatory, and exactly:

- independent implementation everyone species works, tasks, forms control, provided by the work program of this academic discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

Unacceptable in educational activities for participants of the educational process are:

- the use of family or official ties to obtain a positive or higher grade during any form of control of academic performance or academic merit;

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- use of prohibited auxiliary materials or technical means (cheat sheets, notes, micro-earphones, telephones, smartphones, tablets, etc.) during control measures;
  - going through procedures for monitoring the results of training by fake persons. For violation of academic integrity, students can be
- are brought to the following academic responsibility:
- a decrease in the results of assessment of the control work, assessment in class, credit, etc.;
  - retaking the assessment (test, credit, etc.);
  - assignment of additional control measures (additional individual tasks, control works, tests, etc.);
  - conducting an additional inspection of other works authored by the violator.

*Attendance and Tardiness Policy:*

Uniform: a medical gown that completely covers the outer clothing, or medical pajamas, a cap, a mask, and a change of shoes.

Equipment: notebook, pen, phonendoscope.

State of health: applicants suffering from acute infectious diseases, including respiratory diseases, are not allowed to attend classes.

A student who is late for class can attend it, but if the teacher has put "nb" in the journal, he must complete it in the general order.

*Use of mobile devices:*

Mobile devices may be used by students with the permission of the instructor if they are needed for the assignment.

*Behavior in the audience:*

The behavior of applicants and teachers in the classrooms should be working and calm, strictly comply with the rules established Provisions on academic integrity and ethics of academic relations in Odesa National Medical University, in accordance with Academic Code of ethics and relations of the university community of Odesa National University medical university, Regulation on prevention and detection academic plagiarism in the research and educational work of university graduates of education, scientists and teachers of the Odesa National Medical University university.