

## SYLLABUS

### 1. General information on discipline

<b>Full course name</b>	Hygiene and Ecology
<b>Full official name of higher educational institution</b>	Sumy State University
<b>Full name of a structural unit</b>	Medical Institute. Department of Public Health
<b>Author(s)</b>	Yasenok Viktoriia Oleksandrivna, Smiianov Vladyslav Anatolyovich
<b>Cycle/higher educational level</b>	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7 <sup>th</sup> Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
<b>Semester</b>	18 weeks during 5th semester
<b>Workload</b>	The volume is 3 credits, 90 hours, of which 50 hours is contact work with the teacher (14 hours of lectures, 36 hours of practical classes)
<b>Language(s)</b>	English

### 2. Place in the study program

<b>Relation to curriculum</b>	Compulsory course available for study programme “Medicine”
<b>Prerequisites</b>	Required knowledge of: Medical biology, Biochemistry, Biophysics, Physiology
<b>Additional requirements</b>	There are no specific requirements
<b>Restrictions</b>	There are no specific restrictions

### 3. Aims of the course

The aim of the course is providing education of high qualified medical specialists capable to solve complex problems and tasks in disease prevention.

### 4. Contents

## Topic 1 Occupational health

Physiology of work. Harmful factors of working process. The concept of occupational diseases and professional diseases, their classification, and measures of prevention are taken and implemented. Organization of work place. Monotony of work, its prevention. Occupational burden and stress. Ergonomics of the workplace. The influence of physical factors of the production environment (noise, vibration, high-frequency electromagnetic vibrations, etc.) on the health of workers. The disease and its prevention. Vibration disease and its prevention. Industrial microclimate, influence on health of workers, prevention of associated pathology. Altitude sickness, season diseases, their prevention. Carcinogenicity, mutagenic, allergic factors in production, prevention of their harmful effects. Production dust, its classification, prevention of harmful action. Production toxicology. Complex, combined effect of industrial harmful effects. Biological factors in production, prevention of their adverse effect. Hygienic requirements for heating, ventilation and lighting of production premises. Prevention of industrial injuries. Professional poisoning and their prevention. Occupational health in main branches of industrial and agricultural production, women and teenagers, elderly and disabled. Nutritional care in prevention of occupational diseases. Individual protection means. Hygiene legislation in the field of occupational health

## Topic 2 Hygiene of children and adolescents

Factors and environmental conditions that affect health of children and adolescents. Criteria and methods of comprehensive health assessment of children and teenagers. Key indicators and regional standards of physical development. Modern ideas about acceleration and retardation. The concept of biological age, criteria for its definition. Health groups. Methods of hygienic assessment of health state and physical development of organized children's group. Location children's institutions as an important factor of recovery. Hygienic requirements to planning, arrangement, equipment and sanitary and technical improvement of school premises. Methodology of hygienic evaluation of planning, equipment and maintenance of pre-school educational institutions and schools. Main shapes and types of educational furniture and their hygienic assessment. Concept about the day schedule (regimen); method of assessing the day schedule of the child. Hygienic requirements concerning the organization of educational process in children's institutions. Method of hygienic evaluation of studying schedule. Organization of catering for children in preschool and school educational institutions and its control. Hygiene of physical education of children and teenagers. Concept of moving activity. Prevention of hypokinesia. Basic kinds, forms and means of physical culture. Methods of evaluation of gym-classes, arts and crafts training. Sanitary and hygienic requirements to children's toys and school textbooks.

### Topic 3 Hospital hygiene

The importance of the hygienic regime of medical institutions as the means of improving the efficiency of treatment, the prevention of hospital-acquired infections, the establishment of safe working practices of medical institutions and their improving. Modern systems of hospital building, their hygienic assessment and prospects of improvement. Hygienic measurements for location of hospitals. General plan for building of hospital area, hygienic facilities to constructions (facilities, density of building and greening, mutual shift of buildings, amenities), functional construction of the site. Hygienic aspects of planning, development, recognition and treatment of dental departments: therapeutic, surgical, orthopedic, pediatric. Sanitary-hygienic and anti-epidemic treatment in the hospital and the clinic. The hygienic measures of two sanitary conditions in patients. Mode and facilities for cleaning, ventilation, removal and neutralization of solid wastes, drainage and sewage in medical facilities. Hospital-acquired infections, their prevalence and causes. The system of sanitary and hygienic measures concerning prevention of infectious diseases. Occupational diseases and health of medical workers, including dentists and dental technicians in combined, complex and combined action of harmful substances on them. Measures to improve working conditions.

### Topic 4 Basics of radiation safety in work with sources of ionizing radiation

Ionizing radiation as a occupational hazard. The main doses of radiation and their characteristics. The concept of anti-radiation protection of the workers and radiation safety of patients when using radionuclides and other sources of ionizing radiation. Radiation safety of patients and staff during X-ray tests in dentistry. Radiation control over production environment and individual doses of radiation in staff, medical control over health of workers. Principles of radiation safety. The concept of closed and open sources of ionizing radiation, features of radiation hazard and radiation protection when working with them. Anti-radiation protection working with radionuclides and other sources of ionizing radiation as a hygienic problem, its essence and basic principles of implementation: Hygienic normalization of ionizing radiation. Organization of radiation control.

### Topic 5 Hygienic provision during emergencies

Organization of sanitary and hygienic activities in emergency situations. Hygiene of field placement of civil formations and their working conditions during disaster management. Organization of nutrition of civil formations and victims of emergency situations/disasters. Sanitary and hygienic examination of food in emergency situations. Water supply of civil formations and victims under emergency situations. Selection of water sources and evaluation of their quality with the help of service tools. Cleaning, disinfection, deactivation of water in emergency situations. Hygienic characteristics of the main factors that determine working conditions in emergency situations

### Topic 6 Final module test

Conducted in the form of a differential control in two stages: 1) testing; 2) solving situational problems

## 5. Intended learning outcomes of the course

After successful study of the course student will be able to:

LO1	Ability to determine the necessary mode of work, rest, and diet in the treatment course.
LO2	Ability to assess the influence of environment determinants on the health of a children and adolescents, workers, patients in medical institutions and population in conditions of emergencies or military operations.
LO3	Ability to develop and carry out preventive measures for infectious and non-infectious diseases, on the basis of data on the connection the state of the environment and the health of a certain group of population.

## 6. Role of the course in the achievement of programme learning outcomes

Program Learning Outcomes achieved by the course

For 222 Medicine:

PO7	To determine an appropriate work and rest mode in the treatment of diseases (according to the List 2) at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.
PO8	To determine an appropriate diet in the treatment of diseases (according to the List 2) at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.
PO16	To plan and implement a system of sanitary and preventive measures against the occurrence and spread of diseases among the population.
PO19	To assess environmental impact on public health.
PO21	To organize an appropriate level of individual safety (own and of those cared for) in case of typical dangerous situations in the individual field of activity.

## 7. Teaching and learning activities

### 7.1 Types of training

<b>Topic 1 Occupational health</b>
Lect. 1 "Physiological bases of work. Physical factors of the production environment and their impact on health "(full-time)  The physiological bases of physical and brain work, modern principles and criteria of hygienic evaluation of work and its classification by degree of burden and tension are considered; the system of preventive measures for the rational organization of the working process; classification, main sources of production noise and vibration and prevention of their negative health effects are highlighted.

Lect. 2 "Chemical factors of the production environment and their impact on health" (full-time)

Issues of chemical factors of the production environment, production poisons as factors of professional hazards, their characteristics, effects on health, methods of determination and evaluation, prevention of acute and chronic poisoning in conditions of production are considered

Pr.tr.1 "Methods of hygienic assessment of the severity of workload in order to prevent exhaustion and improve performance" (full-time)

Students get acquainted with the main hazards of the production environment, methods and means of determining the most common industrial hazards, legislative, organizational, technical, technological means of preventing occupational diseases; master the knowledge of hygienic assessment of the workload, methods of preventing exhaustion and improving of performance. Practical work: according to situational tasks, students calculate and assess the parameters of the microclimate of the working area and the concentration of harmful substances in the air of the working zone, provide recommendations for organizing preventive measures; provide an assessment of the severity and workload, develop measures to prevent exhaustion and increase the working capacity of workers.

Pr.tr.2 "Methods of hygienic assessment of production noise and vibration" (full-time)

Students master theoretical knowledge of production noise and vibration, their physical characteristics, classification, methods for determining their levels, study the manifestations of their biological effect on the human body and ways to prevent negative influences. Practical work: 1) students measure noise levels using a audio-noise meter, the results of measurement are compared with hygienic standards and conclusions are made; 2) according to situational problems, students calculate total noise levels in working premises, assess vibration parameters, make up a spectrogram and provide hygienic assessment of the results.

Pr.tr.3 "Methods of hygienic evaluation of air dustiness of industrial premises" (full-time)

Students learn theoretical knowledge about the origin, classification and characteristics of industrial and agricultural dust; on the effect of dust on the body and diseases associated with air dustiness, dust hygienic evaluation of the air, methods for determining the concentration of dust and the degree of dispersion. Practical work: according to laboratory research, students determine the concentration of dust in the air and the degree of its dispersion, provide a hygienic assessment of the results and recommendations for the prevention of the development of dust pathology in the employees of the enterprise.

Pr.tr.4 "Methods of investigation of occupational diseases (poisonings)" (full-time)

During the lesson, students get theoretical knowledge on the rules and procedure for investigating occupational diseases and poisonings, registration of necessary documents, consolidate knowledge about methods and means of prevention of occupational diseases and poisonings. Practical work: according to situational tasks, students assess working conditions, complaints and clinical symptoms of workers, list the possible causes that caused the occurrence of this disease (poisoning), compose an emergency message about the case of a professional disease (poisoning), indicate the measures that the doctor should take in a particular case.

Pr.tr.5 "Methods of hygienic evaluation of chemical factors in production environment." (full-time)

Students learn the classification of industrial poisons, clinical manifestations of poisoning with chemical substances, most often found in enterprises of the national economy, get to know the basic methods of determining the degree of toxicity and danger of production poisons, with the principles of primary prevention of their negative impacts. Practical work: 1) according to the laboratory study of air samples by the aspiration (method by Polezhayev) absorber, the concentrations of the chemical in the air of the working zone are calculated; 2) according to the physical and chemical characteristics of substances they assess the degrees of toxicity and danger, develop recommendations for the prevention of occupational poisoning.

## **Topic 2 Hygiene of children and adolescents**

Lect. 3 "Children's health and the environmental factors" (full-time)

The questions of general means of development in children and adolescents, methods of evaluation of physiological reserves of the main organs and systems of the child's body are considered; principles of distribution of children into health groups; requirements to the regime of the day, to the organization and schedule of studying, as well as the issue of preventing fatigue in children are studied.

Lect. 4 "Hygienic bases of creating a healthy environment for children and adolescents" (full-time)

The issues of planning, maintenance and decoration of children's educational institutions are considered; sanitary and hygienic requirements for the organization of the workplace for schoolchild and state of children's things (books, toys, shoes and clothes) are studied.

Pr.tr.6 "Methodology of comprehensive health assessment in children and adolescents" (full-time)

Students assimilate theoretical knowledge of environmental factors and conditions affecting the processes of formation of children's health, general regularities of development of the child's body, basic criterion and indicators of children's health and methods of determining the health indicators of children. Practical work: 1) students investigate the functional state of the main body systems using functional tests; 2) According to atropometric studies, students evaluate the physical development of the child, using methods of sigmatic deviations, a centrifugal method, a method of regression scales and a complex method.

Pr.tr.7 "Methods of studying the age-related psychophysiological characteristics in children and adolescents. Methods of hygienic evaluation of educational process and regime of the day" (full-time)

Students acquire knowledge about the anatomical-physiological and psychophysiological features of the organism of children and adolescents, criteria for assessing the level of psychophysiological development of the child, the procedure for studying the age psychophysiological characteristics of children and adolescents, the procedure for assessing the functional readiness of the child to study at school (express evaluation and in-depth psychophysiological examination of the highest nervous activity), the rules of organization of the day regime, organization of the studying process. Practical work: 1) students evaluate the mechanical, verbal-logical and figurative memory, verbal-logical thinking of the child; 2) they evaluate the performance by Kern-Irasek test and draw conclusions about the child's readiness to study at school; 3) evaluate the mode of the child's day; 4) evaluate the schedule of lessons and draw appropriate conclusions.

Pr.tr.8 "Methods of hygienic evaluation of equipment and maintenance of educational institutions" (full-time)

Students acquire knowledge of hygienic requirements for the location and the building of educational institutions, planning and sanitary and technical improvement (microclimate, lighting, ventilation, water supply, etc.) of the main premises of educational institutions. Practical work: according to situational tasks, students evaluate the planning of location of the educational institution for children, the area of the main premises, the quality of ventilation, lighting, location and size of furniture in the classroom.

Pr.tr.9 "Methods of hygienic evaluation of children's items (toys and books)" (full-time)

Students master theoretical knowledge about the criterion of compliance of toys according to gender and age characteristics of the child; classification of toys by age and didactic purpose; hygienic requirements for materials, paints used for the production of toys; Criterion of hygienic evaluation of toys; indicators of the degree of visual load during reading; the main criterion and indicators of hygienic assessment of children's books. Practical work: students provide hygienic assessment of the school textbook and toys.

### **Topic 3 Hospital hygiene**

Lect. 5 "Hygiene of medical institutions" (full-time)

The issues of planning, equipment and maintenance of medical institutions are considered; as well as problems of nosocomial infections and their prevention

Pr.tr.10 "Methods of hygienic evaluation of location and planning of certain structural units of the hospital" (full-time)

Students acquire knowledge of hygienic requirements for the location and planning of medical institutions on the basis of study and analysis of educational design materials and normative documents. Practical work: 1) students determine and evaluate compliance with the standards of the size of the land plot, which is subject to construction, zoning of the hospital, the percentage of construction, landscaping, orientation, according to the construction drawings of situational and general plans for placement and zoning of the territory of medical and preventive institutions, with the consideration of objects located around the land plot, "compass rose" 2) students determine and evaluate accordance with the hygienic standards of the area, cubation, sanitary improvement of hospital premises, according to the plans and sections of buildings.

Pr.tr.11 "Hygienic assessment of patients` conditions and working conditions of medical workers in medical institutions "(full-time)

Students learn about the hygienic conditions of in-patients and the harmful factors that affect efficiency of the treatment and health of medical workers; get acquainted with legislative and organizational measures to ensure the optimal regime, hygienic conditions for patients and medical workers; assimilate the general scheme and methods of subjective and objective sanitary supervision of the conditions of in-patients and working conditions of medical workers. Practical work: students carry out sanitary examination of the university clinic, determine and assess harmful and dangerous factors in the subdivisions of the institution, their impact on the health of patients and health workers.

#### **Topic 4 Basics of radiation safety in work with sources of ionizing radiation**

Lect.6 "Ionizing radiation as an environmental factor and production hazard" (full-time)

The issues of radiation hazard of working with sources of ionizing radiation are considered; anti-radiation protection of staff and radiation safety in patients when using radionuclides and other sources of ionizing radiation; radiation monitoring of the production environment and individual doses of irradiation of staff, medical monitoring of the health of workers, principles of radiation safety and anti-radiation protection, etc. are studied.

Pr.tr.12 "Methods and means of radiation control and radiation protection people who work with sources of ionizing radiation and population in their habitats" (full-time)

Students acquire and systematize theoretical knowledge about radiation hazards of staff, working with radionuclides and other sources of ionizing radiation and population in their habitats; They master methods and means of measuring radiation levels and concentration of radionuclides in air, water, food products, radioactive contamination of surfaces, individual doses of irradiation of those who work with sources of ionizing radiation, evaluate their results.

Pr.tr.13 "Calculation methods of estimation of radiation hazard and parameters of protection against external radiation" (full-time)

Students acquire theoretical knowledge about the physical basics of radiation, state legislation on radiation hygiene, the action of ionizing radiation on living organisms; possess calculated methods for assessing radiation hazards and parameters of protection from external radiation when working with sources of beta, gamma and X-ray radiation. Practical work: according to situational problems, students calculate parameters of protection against external irradiation on the basis of weekly doses of irradiation, as well as determining the capacity of doses absorbed in the air; determine the thickness of protective screens.



Pr.tr.14 "Hygienic evaluation of anti-radiation protection of workers and radiation safety in patients when using radionuclides and other sources of ionizing radiation in medical institutions" (full-time)

Students master the methods and means of radiation control of working conditions of health workers and protection of patients in the radiological departments of hospitals. Practical work: according to situational problems, students draw up schemes for the placement of structural units of the radiology department and X-ray offices, make a program for assessing the radiation safety of personnel in each unit of the radiological department of the hospital, provide a hygienic assessment of the working conditions of the medical staff of the departments for the treatment with closed and open sources of ionizing radiation.

### **Topic 5 Hygienic provision during emergencies**

Lect. 7 "Hygiene of emergency conditions" (full-time)

The issues of hygienic support of military and civil formations, rescue teams and victims during emergency conditions, disasters and hostilities are considered

Pr.tr.15 "Basics of organization of field deployment of military and civil formations in emergency situations and during military actions" (full-time)

Students get acquainted with the hygienic requirements for land plots to accommodate formations and its planning; for sanitary improvement of placement (water supply, collection, removal and disposal of wastes); for the microclimate and chemical composition of the air environment in field dwellings, fortifications, immersed in the ground. Practical work: 1) students consider project materials (situational and general plans, premises` plans) and draw conclusions; 2) according to situational tasks, students calculate the necessary volume of ventilation of the storage, the maximum term of staying in the shelter, needed cubic content of the shelter.

Pr.tr.16 "Hygienic basics of organization of sanitary supervision for nutrition of military and civil formations in emergency situations and during military actions" (full-time)

Students master the methods of medical control over the completeness and safety of nutrition in formations in the field under emergency situations and military actions; study the order of investigation of food poisoning; procedure for medical examination of food with the help of medical means. Practical work: according to situational problems, students 1) evaluate the nutrition of the staff of formations (according to the layout, by studying the set of products in the daily diet, the conditions for their storage, processing, implementation, by the control and weight method, by determining the food status) 2) assess the quality of food products according to laboratory tests.

Pr.tr.17 "Hygienic bases of water supply in military and civil formations in emergency situations and during military actions" (full-time)

Students acquire theoretical knowledge about the norms of water supply formations in the field, the peculiarities of the requirements for the quality of drinking water in the military and field conditions, the composition and material equipment of the survey group of water supply sources, the order and methods of exploring water sources during emergencies and military actions, study methods of hyperchlorination, deactivation and desalination. Practical work: according to situational problems, students calculate the debit source of water supply, determine the quality of water in the source, calculate the amount of disinfectant for effective disinfection of water.

### **Topic 6. Final module control**

A18 "Final module control" (full-time)

Conducted in the form of a differential control in two stages: 1) testing; 2) solving situational problems

## 7.2 Learning activities

LA1	Solving individual tasks, problems
LA2	Solving practical tasks
LA3	E-learning in systems (Zoom, MIX.sumdu.edu.ua, Google Meet)
LA4	Taking notes
LA5	Discussion (in chats, forums)
LA6	Preparation for lectures
LA7	Preparation for practical studies

## **8. Teaching methods**

Course involves learning through:

TM1	Interactive lectures
TM2	Case-based learning (CBL)
TM3	Think-pair-share method
TM4	Brainstorming
TM5	Case-study
TM6	Illustrative method
TM7	Project method

The ability to conduct sanitary and hygienic and preventive measures are formed by: interactive lectures, case studies, peer assessment, brainstorming, analysis of specific situations. Ability to assess the impact of the environment, socio-economic and biological determinants on the health of an individual, family, population are formed by analysis of specific situations, case-study, brainstorming, project method.

The ability of abstract thinking, analysis and synthesis are formed by: analysis of specific situations, brainstorming, project method, case study, peer assessment. The ability to communicate in state language both orally and in writing are developed through: peer assessment, analysis of specific situations. The ability to learn and master modern knowledge is formed by interactive lectures, analysis of specific situations, brainstorming, case studies. Ability to search, process and analyze information from different sources, to analyze specific situations, exchange opinions, make informed decisions are developed by analysis of specific situations, brainstorming; case-method; peer assessment, illustrative method.

## 9. Methods and criteria for assessment

### 9.1. assessment criteria

ECTS	Definition	National scale	Rating scale
	Outstanding performance without errors	5 (Excellent)	170 < RD < 200
	Above the average standard but with minor errors	4 (Good)	140 < RD < 169
	Fair but with significant shortcomings	3 (Satisfactory)	120 < RD < 139
	Fail – some more work required before the credit can be awarded	2 (Fail)	0 < RD < 119

### 9.2 Formative assessment

FA1	Peer assessment
FA2	Express-testing
FA3	Guidelines form the teacher in the process of performing the practical tasks
FA4	Interviews and oral comments of the teacher
FA5	Discussion and self-correction of students` works
FA6	Solving situational tasks

### 9.3 Summative assessment

SA1	Current assessment of practical tasks performance
SA2	Conducting a complex final writing test

Form of assessment:

<b>5 semester</b>		<b>200 scores</b>
SA1 Current assessment of practical tasks performance		<b>120</b>
	Assessment of current activities and continuous assessment	120
SA2. Conducting a complex final writing test		<b>80</b>
	Test and situational problems (2x40)	80

Form of assessment (special cases):

<b>5 semester</b>		<b>200 scores</b>
SA1. Current assessment of practical tasks performance		<b>120</b>
	In the case of quarantine restrictions, classes are provided online, using platforms Mix.sumdu.edu.ua, Zoom, Google meet.	120
SA2. Conducting a complex final writing test		<b>80</b>
	In the case of quarantine restrictions, testing is provided online, using platforms Mix.sumdu.edu.ua, Zoom, Google meet.	80

Assessment for discipline is the sum of assessments for current educational activities and for module control. The continuous assessment represents a general assessment for auditorial work based on the result of studying all topics and is carried out on a traditional 5-point scale. The average score is calculated, which is defined as the sum of all positive scores divided by the total number of them, then converted to scores of the credit-module scale by multiplying by the empirical coefficient 24. The maximum number of scores for current educational activity is 120, the minimum – 72. The final module control is allowed for students who have attended all classes, have completed all types of work by the curriculum, and in the course of current educational activity have gained at least 72 points. In case of lack of points for current achievements, the student has the opportunity to increase his/her assessment by drawing up additional written control, which includes questions on all topics of the module. Final module control is carried out in 2 stages: 1 stage - computer testing (control of theoretical knowledge); 2 stage - solving of situational problem (control of practical skills). Computer testing is carried out using Assistant program or on the MIXLearning platform. The number of control tests is 20. According to the results a student receives a score equal to the number of correct answers. The second stage of final module control is carried out in writing. Number of questions (tasks) in the ticket - 4. Each question (task) is evaluated by a 5-point scale, then the score is converted to points of the credit-modular-rating scale as follows: "5" - 10 scores, "4" - 8 scores, "3" - 6 scores, "2" - 0 scores. Final module control is credited if the student scored at least 48 points for both stages.

## 10. Learning resources

### 10.1 Material and technical support

MTS1	Information and communication systems
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MTS2	Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, screens)
MTS3	Computers, computer systems and networks
MTS4	Software (support of distance learning, Internet testing, virtual laboratories, virtual patients, creation of computer graphics, modeling, etc.)
MTS5	Instruments (measuring, mobile mini-laboratories, etc.)
MTS6	Environmental objects

## 10.2 Information and methodical support

<b>Essential reading</b>	
1	Hygiene and ecology: Textbook / Edited by VG Bardova. - Vinnytsia: Nova Kniga, 2020. - 720 p.
2	Fundamentals of Ukrainian legislation on health care. Law of Ukraine "On Ensuring Sanitary and Epidemic Welfare of the Population".
<b>Supplemental reading</b>	
3	General hygiene. Socio-hygienic monitoring: textbook. for universities / PI Melnichenko [etc.]: ed. PI Melnichenko. - M.: Practical Medicine, 2015. - 512 p.
4	Radiation hygiene: a textbook for interns and listeners / [Murashko VO, Mechev DS, Bardov VG etc.]. - Vinnytsia: Nova Kniga, 2013. - 376 p.
5	Occupational health: Textbook / YI Kundiev, OP Yavorovsky, AM Shevchenko and others; for order. acad. NAS of Ukraine, NAMS of Ukraine, prof. Yu.I. Kundieva, Corresponding Member NAMS of Ukraine prof. OP Yavorovsky. - K.: BCB "Медицина", 2011. - 904с.
6	Oxford Textbook of Global Public Health, 6th edition. Edited by Roger Detels, Martin Gulliford, Quarraisha Abdool Karim, Chorh Chuan Tan. – Vol. 1. OxfordUniversity Press. Published: 2015. - 364 p.
7	Oxford Textbook of Global Public Health, 6th edition. Edited by Roger Detels, Martin Gulliford, Quarraisha Abdool Karim, Chorh Chuan Tan. – Vol. 2. OxfordUniversity Press. Published: 2015. - 541p.
8	Oxford Textbook of Global Public Health, 6th edition. Edited by Roger Detels, Martin Gulliford, Quarraisha Abdool Karim, Chorh Chuan Tan. – Vol. 3. OxfordUniversity Press. Published: 2015. - 737 p.



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