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ФИО: Ястребов Олег Александрович  
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**Federal State Autonomous Educational Institution for Higher Education  
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE  
LUMUMBA  
RUDN University**

**Institute of Medicine**

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educational division (faculty/institute/academy) as the higher education programme developer

**COURSE SYLLABUS**

**Hygiene**

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course title

**Recommended by the Didactic Council for the Education Field of:**

**31.05.03 Dentistry**

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field of studies / speciality code and title

**The course instruction is implemented within the professional  
education programme of higher education:**

**Dentistry**

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higher education programme profile/specialisation title

## 1. COURSE GOAL(s)

Course "Hygiene" is included in the specialty program "Dentistry" in the field of 31.05.03 "Dentistry" and is studied in the 6th semester of the 3rd year. Department of Public Health, Healthcare and Hygiene implements the discipline. The discipline consists of 5 sections and 17 topics and aims at studying the mechanisms the interaction of various environmental factors and the human body, as well as preventing the impact of adverse environmental factors on the human body.

The purpose of mastering the course "Hygiene" is to acquire theoretical knowledge of all modules of hygienic science, students to master the methodology of preventive medicine and gain practical skills in sanitation, the formation of preventive thinking among students, the acquisition of hygienic knowledge and skills to assess the impact of environmental factors on the health of the population.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

The course "Hygiene" is expected to develop the following competences:

*Table 2.1. List of competences formed in students in the course of mastering the discipline (Learning outcomes)*

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-7	Is able to maintain an appropriate level of physical preparedness to ensure full social and professional activity	GC-7.1. Chooses health-saving technologies to maintain a healthy lifestyle, taking into account the physiological characteristics of the body
		GC-7.2. Plans his or her work time for an optimal combination of physical and mental load and working capacity
		GC-7.3. Follows and promotes healthy lifestyle norms in various life situations and in professional activities
GC-8	Is able to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure sustainable development of society, including the threat and emergence of emergencies and military conflicts	GC 8.1. Analyzes the harmful effects of environmental elements (technical equipment, technological processes, materials, buildings and structures, natural and social phenomena) on people's life activities
		GC 8.2. Identifies hazardous and harmful factors within the framework of the activity
GPC-4	Is able to carry out and monitor the effectiveness of prevention, forming of healthy lifestyle and hygiene education measures	GPC-4.1. Analyses public awareness of healthy lifestyles and health literacy
		GPC 4.2. Elaborates a plan for improving the sanitary culture and disease prevention of the population, organizational and methodological measures aimed at raising public awareness of healthy lifestyles and dental disease prevention literacy
SPC-5	Is able to provide health education to the public and health care workers in order to promote healthy lifestyles	SPC-5.1. Builds motivation among patients (their relatives/legal representatives) to lead a healthy lifestyle and to avoid unhealthy habits
		SPC-5.2. Shapes positive behavior in patients (their relatives/legal representatives) to maintain and improve their health

### 3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course refers to the core/variable/elective\* component of (B1) block of the higher educational programme curriculum.

\* - Underline whatever applicable.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course study.

*Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results*

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Previous courses/modules*</b>	<b>Subsequent courses/modules*</b>
GC-7	Is able to maintain an adequate level of physical preparation to ensure full social and professional activity	Physical Culture and Sports, Applied Physical Culture	Public health and healthcare
GC-8	Is able to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in emergencies and military conflicts	Fundamentals of military training. Life safety	Medical rehabilitation; Infectious diseases, phthisiology; Epidemiology
GPC-4	Is able to carry out and monitor the effectiveness of disease prevention, healthy lifestyle promotion and public health education	Preventive and community dentistry	Pediatric dentistry Orthodontics and pediatric prosthetics Medical Rehabilitation
SPC-5	Is able to provide health education to the public and health care professionals to promote healthy lifestyles	Local anesthesia and anesthesiology in dentistry, Prevention and community dentistry; Psychology, pedagogy	Assistant dentist (general practice), incl. research work; Assistant dentist (therapist); Children's dentistry; Head and neck diseases; Implantology and reconstructive surgery of the oral cavity; Orthodontics and children's prosthetics; Oral surgery; Maxillofacial and gnathic surgery; Public health and healthcare

### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "Hygiene" is 3 credits (108 academic hours).

Table 4.1. Types of academic activities during the periods of higher education programme mastering (*full-time training*)\*

Type of academic activities	Total academic hours	Semesters/training modules			
		6			
Contact academic hours, ac.h.	72	72			
including:					
Lectures ( LC )					
Lab work ( LW )	72	72			
Seminars (workshops/tutorials) ( S )					
Self-studies	33	33			
Evaluation and assessment (exam/ passing/failing grade)	3	3			
Course workload	ac.h.	108	108		
	Credits	3	3		

## 5. Course Modules and Contents

Table 5.1. Course Modules and Contents by Academic Work Kinds

Module	Topics Content	Academic Work Kind
Module 1. Nutrition hygiene	<b>Topic 1.1.</b> Hygienic principles of rational nutrition. Calculation of fluoride content in the daily diet. Hygienic principles of rational nutrition and specific requirements for different population groups. Calculation of fluoride intake based on fluoride content in daily food products and by food groups (according to Gabovich).	LW
	<b>Topic 1.2.</b> Dietary, therapeutic-preventive, and preventive nutrition. Characteristics of main therapeutic diets (number system) depending on patient's diagnosis, and standard diets used in hospitals at the present stage; justification of therapeutic-preventive rations, vitamin supplements, milk, pectin for workers in hazardous conditions; preventive anti-cardiosis and anti-phyllororous nutrition.	LW
	<b>Topic 1.3.</b> Sanitary and hygienic expertise of foodstuffs (principles, conclusions). Nutritional and biological value, safety of products of animal origin (meat, fish, milk) Purpose, tasks, principles of sanitary expertise of food products; nutritional and biological value; diseases associated with consumption of poor-quality food (by origin); methods of sanitary expertise; signs of good quality, poor quality, conditional suitability, adulteration, etc. Hygienic requirements for meat, fish, milk; detection of stale milk and/or adulteration (skimming, dilution with water, dilution with water and starch addition).	LW

	<p><b>Topic 1.4.</b> Nutritional and biological value, safety of products of plant origin. Food preservation methods and sanitary and hygienic expertise of canned food and concentrates.</p>	<p>Biological and nutritional value of cereals, legumes, bread in human nutrition; hygienic criteria for assessing quality of bread, canned food, concentrates; methods of sanitary expertise of bread, canned food, concentrates.</p>	<p><b>LW</b></p>
	<p><b>Topic 1.5.</b> Food poisoning and its prevention. Classification of food poisoning; basic clinical signs, sources, causes and preventive measures of food poisoning.</p>		<p><b>LW</b></p>
<p><b>Module Communal hygiene</b></p>	<p><b>2.</b></p>	<p><b>Topic 2.1.</b> Hygiene assessment of the air environment - physical indicators (microclimate) Concepts: climate, microclimate, weather; indicators of weather, climate and microclimate (atmospheric pressure, average temperature, vertical and horizontal temperature differences, thermal radiation, humidity, air movement speed) and their hygienic significance, acclimatization; instruments (barometer, thermometer, actinometer, August psychrometer, Assmann psychrometer, katathermometer, meteometer) and measurement rules.</p>	<p><b>LW</b></p>
		<p><b>Topic 2.2.</b> Hygiene assessment of the air environment - chemical pollution. Main indicators of air purity in public and industrial premises (integral indicator – carbon dioxide CO<sub>2</sub> content, dust concentration, microbial contamination – total and hemolytic streptococcus), their hygienic standards.</p>	<p><b>LW</b></p>
		<p><b>Topic 2.3.</b> Hygiene assessment of natural lighting. Concepts: insolation, natural lighting, artificial lighting; hygienic indicators and their standards; principles of measuring illumination with a luxmeter.</p>	<p><b>LW</b></p>
		<p><b>Topic 2.4.</b> Hygiene assessment of drinking water. Water fluoridation and defluoridation methods. Hygienic requirements for drinking water quality by: (1) organoleptic (color, transparency, odor), (2) generalized (pH, total hardness), (3) indicators of fecal contamination (protein breakdown products – ammonia, nitrites, nitrates; oxygen content, permanganate oxidizability, BOD; presence of E. coli and chlorides), (4) epidemiological, (5) fluorosis risk – fluorides by climatic zones (MAC in cold and temperate climates = 1.5 mg/L, MAC in warm and hot climates = 1.2 mg/L). Methods of water fluoridation in centralized and local water supply; optimal fluoride levels in water (optimal = 1.0 mg/L in cold/temperate, 0.9 mg/L in warm, 0.7 mg/L in hot climates) ensuring optimal dental health; indicative deficient fluoride content in drinking water promoting dental caries (&lt;1 mg/L in cold/temperate, &lt;0.5-0.6 mg/L in warm/hot climates).</p>	<p><b>LW</b></p>

		<p><b>Topic 2.5.</b> Hygienic assessment of soil quality in populated areas. Hygienic requirements for soil according to epidemiological indicators, Khlebnikov's sanitary number, presence of chemical elements and organic pollution. Methods of sanitary assessment of soil.</p>	<b>LW</b>
		<p><b>Topic 2.6.</b> Hygiene assessment of ionizing radiation. Dosimetry and radiation protection. Nature, types (alpha, beta, gamma, X-ray), classification of sources (open, closed), concept of natural radiation background, types of ionizing radiation doses (exposure, absorbed, effective, equivalent), principles of dosimetry, basic dose limits, principles of radiation protection (by quantity, distance, time, shielding); concept of "half-value layer" for shields made of different materials.</p>	<b>LW</b>
<b>Module Hygiene healthcare organizations</b>	<b>3. of</b>	<p><b>Topic 3.1.</b> Prevention of health care-associated infections Hospital hygiene. Features of structural and planning solutions of medical and preventive institutions, dental clinics. Prevention of nosocomial infections in dental practice.</p>	<b>LW</b>
<b>Module Occupational hygiene</b>	<b>4.</b>	<p><b>Topic 4.1.</b> Fundamentals of occupational health and safety for workers. The physiological basis of the work process Fundamentals of occupational hygiene. Work physiology: phases of work capacity; Ukhtomsky's concept of "dominant"; indicators of physical and mental workload; concept of "active rest" and its role in recovery; methods of determining work capacity (tremorometry, chronoreflexometry, proofreading tests – Bourdon test (letter), symbol test).</p>	<b>LW</b>
		<p><b>Topic 4.2.</b> Occupational health and hygiene assessment of working conditions of dentists. Classification of occupational hazards for dentists (1 – factors due to architectural and planning solutions of the dental clinic, 2 – factors due to equipment, instruments and materials, 3 – factors due to treatment process), their impact on workers' health, prevention; requirements for dental clinic layout; prevention of nosocomial infections.</p>	<b>LW</b>

	<p><b>Topic 4.3.</b> Occupational dental and oral diseases in patients. Occupational risk factors for dental and oral diseases. Prevention of occupational and work-related diseases; general and dental occupational diseases of workers exposed to noise, vibration, ultrasound, infrasound, as well as fibrogenic aerosols (byssinosis, bagassosis). The role of the dentist in preventive medical examinations of workers in hazardous working conditions.</p>	<b>LW</b>
<p><b>Module 5. Hygiene in children and adolescents. Hygienic basics for a healthy lifestyle</b></p>	<p><b>Тема 5.1.</b> Hygienic assessment of the physical development of children and adolescents (complex method) at preventive health examinations. Participation of a dentist in the assessment of oral health (DMF index, hygiene indexes). The role of the dentist in preventive examinations of children and adolescents; relationship between health and physical development; main trends in health and physical development of children and adolescents at the present stage: acceleration, retardation, disharmony; approaches to assessing children’s health level (health groups); physical development indicators; methods of determining physical development (somatometry, somatoscopy, physiometry) and assessment (regression method, sigma deviation method, complex method with determination of biological age).</p>	<b>LW</b>
	<p><b>Тема 5.2.</b> Healthy image of life (level, pattern, style, quality), and personal hygiene issues. Dental and oral care as an element of a healthy lifestyle. Categories of lifestyle (level, pattern, style, quality), directions of sanitary education of the population on all aspects affecting health, including condition of teeth and oral soft tissues, covering hygiene of populated areas and housing, occupational hygiene, nutrition hygiene, and individual lifestyle style and quality of life.</p>	<b>LW</b>

\* - to be filled in only for **full**-time training: *LC* - lectures; *LW* - lab work; *S* - seminars.

## 6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

*Table 6.1. Classroom equipment and technology support requirements*

<b>Classroom for Academic Activity Type</b>	<b>Equipping the classroom</b>	<b>Specialized educational/laboratory equipment, Software and materials for mastering the subject (if necessary)</b>
Lab-work	Classroom for laboratory works, group and individual classes and consultations. current control and intermediate certifications, equipped with a set of specialized furniture and equipment.	Laptop ASUS F9E Core 2 DUO T5750, multimedia installation, whiteboard, fume hood, device for bacteriological air analysis. aspirator for air sampling. Information and demonstration stands: Industrial ventilation, Facilities for cleaning emissions into the atmospheric air, Indicators of natural light, Hygienic requirements for the microclimate of premises, Classification of pneumoconiosis, Areas of wards in different departments of hospitals
Lab-work	Classroom for laboratory works, group and individual classes and consultations. current control and intermediate certifications, equipped with a set of specialized furniture and equipment.	Laptop ASUS F9E Core 2 DUO T5750, multimedia installation, whiteboard, electric round drying cabinet, laboratory water bath, electric drying cabinet, titration unit. Information and demonstration stands: Sources of local water supply, Contact clarifier. Signs of fresh milk, Chemical composition and calorie content of leguminous products, Methods of food preservation, Classification of food poisoning, Sanitary examination of meat based on physical and chemical studies, Sanitary examination of meat and fish based on organoleptic properties
Lab-work	Classroom for laboratory works, group and individual classes and consultations. current control and intermediate certifications, equipped with a set of specialized furniture and equipment.	Laptop ASUS F9E Core 2 DUO T5750, multimedia installation, whiteboard, universal beta-gamma intensity meter Luch - A, a set of individual dosimeters type KID - 2. Information and demonstration stands: Periodic table of chemical elements, demonstration bag for collection of class "A" household waste and demonstration sample of the bag for collection of class "B" hazardous waste in medical institutions

Classroom for Academic Activity Type	Equipping the classroom	Specialized educational/laboratory equipment, Software and materials for mastering the subject (if necessary)
Self-studies	Classroom for self-studies of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to Electronic information and educational environment.	A set of specialized furniture; technical means: multimedia projector EPSONE B-965, Laptop ASUSF9ECore 2 DUOT5750, stable wireless Internet connection.

## 7. RESOURCES RECOMMENDED FOR COURSE STUDIES

### *Main readings:*

1. Biological and hygienic value of fluorides. Monograph / Maksimenko L.V., Kiryushin V.A., Tadzhieva A.V. Eko-Vector. 2021. ISBN: 978-5-907201-42-2. 255 c. (Offset).
2. Hygiene: textbook / O.V. Mitrokhin, V.I. Arkhangel'sky, E.V. Belova et al. Under the editorship of O.V. Mitrokhina. Electronic text data. Moscow, GEOTAR-Media, 2022; 368. (in Russ)  
URL: [https://lib.rudn.ru/MegaPro/UserEntry?Action=Link\\_FindDoc&id=508319&idb=0](https://lib.rudn.ru/MegaPro/UserEntry?Action=Link_FindDoc&id=508319&idb=0)
3. Maksimenko LV, Drozhzhina NA, Piven EA. Edited by A.V. Fomina. General hygiene: textbook: in 4 books. Book 3: Occupational health. Moscow, RUDN University, 2022; 177. (in Russ)  
URL: [https://lib.rudn.ru/MegaPro/UserEntry?Action=Link\\_FindDoc&id=509802&idb=0](https://lib.rudn.ru/MegaPro/UserEntry?Action=Link_FindDoc&id=509802&idb=0)
4. Maksimenko LV, Drozhzhina NA, Piven EA, Tadzhieva AV, Efimushkina AS, Orlova AM, Gres SN. Under the editorship of Professor Fomina AV. Hygiene: lecture notes for students studying in the specialty "Medicine": textbook: in 2 parts. Moscow, RUDN University, 2020-2021. Part I 2020; 109. (in Russ)  
URL: [https://lib.rudn.ru/MegaPro/UserEntry?Action=Link\\_FindDoc&id=493544&idb=0](https://lib.rudn.ru/MegaPro/UserEntry?Action=Link_FindDoc&id=493544&idb=0)

### *Additional reading:*

1. General hygiene with the basics of human ecology: textbook for students of dental institutes and dental faculties of higher medical schools, second edition, revised and enlarged. Lakshin A.M., Kataeva V.A. Publishing house: Binom Russia, 2016, 576 p.
2. Hygiene for dentists [Text/electronic resource]: Laboratory practice: Textbook for students studying in the specialty "Dentistry" / L. V. Maksimenko, A. V. Tadzhieva. - Electronic text data. - Moscow: RUDN Publishing House, 2015. - 292 c. : ill. - ISBN 978-5-209-06136-6 : 185.95.
3. Hygienic Bases of Healthy Lifestyle [Text]: Manual / D. I. Kicha, L. V. Maksimenko, A. V. Fomina; - M. : Publishing house of PFUR, 2003. - 93 c. xl. - ISBN 5-209-01575-0 : 40.00.
4. Hygienic value of drinking regime. Role of drinking water in the prevention of noninfectious diseases [Text/electronic resource]: educational-methodical manual for doctors and nurses, students of specialties "Medical Business", "Nursing", "Dentistry" / L. V. Maksimenko. - Electronic text data. - M. : Publishing house of the PFUR, 2013. - 59 c. - ISBN 978-5-209-05488-7 : 44.32.
5. Soil and its hygienic value [Text/electronic resource]: Training manual / L.V. Maksimenko. - Moscow: PFUR Publishing House, 2008. - 49 c. : ill. - 50.00
6. Maksimenko L.V. Waste management medical and preventive institutions. Textbook for

- students of specialties Medical, Dentistry, Nursing. - Moscow: PFUR, 2011, 116 p.
7. Piven E.A., Maksimenko L.V. Hygiene and ecology of water: a monograph. / Review. Prof. E.A. Kiryushin. Kiryushin V.A., Doctor of Biology Larina G.E. - M.: UMI, 2016. 253 c.

*Internet-based sources:*

1. Electronic libraries with access for RUDN students:

- Electronic library of RUDN <http://lib.rudn.ru/MegaPro/Web>
- Electronic libraries « University Online Library» <http://www.biblioclub.ru>
- Electronic library Yurayt <http://www.biblio-online.ru>
- Electronic library «Student advisor» [www.studentlibrary.ru](http://www.studentlibrary.ru)
- Electronic library «Troitskiy most»

2. Databases and search engines:

- *Electronic fund of legal and normative-technical documentation* <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- SCOPUS database <http://www.elsevierscience.ru/products/scopus/>

*Learning toolkits for self-studies\*:*

1. A course of lectures on the subject "Hygiene".

\* - all learning toolkits for self-studies are based in accordance with the current procedure on the page of the subject in **RUDN LMS TUIS**

## **8. ASSESSMENT AND GRADING CRITERIA OF THE LEVEL OF COMPETENCES' FORMATION IN SUBJECT**

Assessment and Grading criteria of the level of competences' formation (parts of competencies) in subject "Hygiene" are presented in the Appendix to this Course Syllabus.

\* - Assessment and Grading criteria are formed according to the requirements of the relevant local normative act of RUDN University.

### **DEVELOPERS:**

Associate Professor in the  
Department of Public Health,  
Health Care and Hygiene

\_\_\_\_\_  
Job title, educational department

L.V. Maksimenko

\_\_\_\_\_  
First name and Surname

\_\_\_\_\_  
Sign

### **HEAD OF THE DEPARTMENT:**

Department of Public Health,  
Health Care and Hygiene

\_\_\_\_\_  
Job title of the educational department

A.V. Fomina

\_\_\_\_\_  
First name and Surname

\_\_\_\_\_  
Sign

### **HEAD OF THE HIGHER EDUCATION PROGRAM:**

Deputy Director of MI in the  
specialty Dentistry

\_\_\_\_\_  
Job title, educational department

S.N. Razumova

\_\_\_\_\_  
First name and Surname

\_\_\_\_\_  
Sign