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Информация о владельце:  
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Должность: Ректор  
Дата подписания: 07.06.2023 17:43:25  
Уникальный программный ключ:  
ca953a0120d891083f939673078ef1a989dae18a

**Federal State Autonomous Educational Institution of Higher Education  
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA  
RUDN University**

**Institute of Medicine**

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

**COURSE SYLLABUS**

Introduction to the Nutritional Science

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course title

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

31.05.01 General Medicine

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field of studies / speciality code and title

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

General Medicine

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higher education programme profile/specialisation title

## 1. COURSE GOAL(s)

The goal of the course “Introduction to the Nutritional Science” is to equip students with the knowledge of the theoretical foundations of classical and modern Nutritional science, the formation in students of the physiological and clinical picture of the processes occurring in the human body.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) “Introduction to the Nutritional Science” is aimed at the development of the following competences /competences in part: UC-1, GPC-1, PC-16.

*Table 2.1. List of competences that students acquire through the course study*

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Competence formation indicators (within this course)</b>
UC-1	Able to carry out a critical analysis of problem situations based on a systematic approach, to develop a strategy for action	UC 1.1 Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis
		UC 1.2 is able to: acquire new knowledge based on analysis, synthesis, etc.; collect data on complex scientific problems related to the professional field; search for information and solutions based on actions, experiments and experience
GPC-1	Able to implement moral and legal norms, ethical and deontological principles in professional activities	GPC 1.1 Knows how to comply with moral and legal standards in professional activities.
		GPC 1.2 Knows how to present professional information in the process of intercultural interaction, observing the principles of ethics and deontology.
PC-16	Able to use role of macro- and micronutrients of food on the metabolism in the human body and nutritional value of food products to solving professional tasks	PC-16 A student should be able to determinate role of macro- and micronutrients of food on the metabolism in the human body and nutritional value of food products to solving professional tasks

## 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

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
UC-1	Able to carry out a critical analysis of problem situations based on a systematic approach, to develop a strategy for action	Anatomy Basics of Nursing	Normal physiology General pathology Healthy person and environment
GPC-1	Able to implement moral and legal norms, ethical and deontological principles in professional activities	.....	Biochemistry Hygiene and human ecology Pharmacology
PC-16	Able to use role of macro- and micronutrients of food on the metabolism in the human body and nutritional value of food products to solving professional tasks	Medical genetics	Organization of preventive work with the population Biochemistry Normal physiology Clinical Pharmacology
...			

\* To be filled in according to the competence matrix of the higher education programme.

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course “Introduction to the Nutritional science” is 2 credits (72 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			
		1			
Contact academic hours	32	32			
including:					
Lectures (LC)	32	32			
Lab work (LW)					
Seminars (workshops/tutorials) (S)					
Self-studies	40	40			

Type of academic activities		Total academic hours	Semesters/training modules			
			1			
<i>Evaluation and assessment (exam/passing/failing grade)</i>						
<b>Course workload</b>	academic hours	72	72			
	credits	2	2			

## 5. COURSE CONTENTS

*Table 5.1. Course contents and academic activities types*

Course module title	Course module contents (topics)	Academic activities types
Module 1 Introduction to Nutritional science	Value nutrition in human life. Nutrition, food products and nutrients.	LC
Module 2 Energy metabolism. Energy requirements	Energy expenditure of the body and energy requirements. Food as a source of energy. Energy balance. Change in body weight. Energy balance and obesity.	LC
Module 3 Macronutrients.	Proteins. Lipids. Carbohydrates. Water. The structure, classification, properties, digestion, absorption, transportation and nutritional value of macronutrients.	LC
Module 4 Micronutrients.	Vitamins. Chemical elements. Amino acids. The general physiological role of vitamins, chemical elements and amino acids. Prevention of loss of vitamins for cooking and storing food. Food is the source of minerals. Prevention of micronutrient deficiencies from food.	LC
Module 5 Non-nutrient bioactive substances in food.	Minor components of food. Protective components of food products. Non-nutrient and some other components of food that have an adverse effect on the body. Chemical changes in basic nutrients during cooking.	LC
Module 6 Nutritional value of food products.	Nutritional, biological values and dietary properties of the main groups of food products (home-cooked food and catering).	LC
Module 7 Nutrition and human health.	Advanced approaches, principles and recommendations. Diseases associated with malnutrition. The link between food, nutrition and non-communicable diseases.	LC

## 6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

*Table 6.1. Classroom equipment and technology support requirements*

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Lecture	A lecture hall for lecture-type classes, equipped with a set of specialised furniture; board (screen) and technical means of multimedia presentations.	
Lab work	A classroom for laboratory work, individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and machinery.	List of specialised laboratory equipment, machinery, stands, etc.
Seminar	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	List of specialised equipment, stands, visual posters, etc.
Computer Lab	A classroom for conducting classes, group and individual consultations, current and mid-term assessment, equipped with personal computers (in the amount of ____ pcs), a board (screen) and technical means of multimedia presentations.	List of specialised software installed on computers for mastering the discipline
Self-studies	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment.	

\* The premises for students' self-studies are subject to **MANDATORY** mention

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

### a) Main readings:

General hygiene [Text/electronic resource] : Textbook: 4 kN. kN. 2 : food Hygiene / N. Ah. Yeast, M. N. Maksimenko, E. A. Piven; Ed. A. V. Fomina. - M. : Publishing house RUDN, 2019. - 199 p.: Il. - ISBN 978-5-209-09027-0 : 99.09.

### b) Additional readings:

1. Tel' L.Z., Dalenov E.D., Abduldaeva A.A. [Nutritiology]. Uchebnik. –M. : Izd-vo LitTerra, 2016. -544 s.

2. Martinchik A.N. [General nutritiology: Textbook]: Uchebnoe posobie / A.N. Martinchik, I.V. Maev, O.O. Yanushevich. – M.: MED press-inform, 2005. – 392 s., ill.
3. Skal'nyj A.V. [Basics Healthy Nutrition: A Handbook on General Nutritiology]/ A.V. Skal'nyj, I.A. Rudakov, S.V. Notova, T.I. Burceva, V.V. Skal'nyj, O.V. Baranova. – Orenburg: IPK GOU OGU, 2005. – 110 s.
4. Majmulov V.G. [Nutrition and children's health]/ V.G. Majmulov, I.Sh. Yakubova, T.S. Chernyakina. – SPbGMA im. I.I. Sechenova, 2003. – 354 s
5. Doncheko L.V. [Food Safety] / L.V. Donchenko, V.D. Nady`kta. – M.: Pishheproizdat, 2001. – 528 s.
6. Tutel`yan V.A. [Micronutrients in the diet of healthy and sick person: reference guide to vitamins and minerals]/ V.A. Tutel`yan, V.B. Spirichev, B.P. Suxanov, V.A. Kudasheva. – M.: Kolos, 2002. – 424 s.
7. [Thompson J.](#), [Manore M.](#), [Linda Ann Vaughan](#) The Science of Nutrition, Pearson Education Canada 2014.- 888
8. Manual of Clinical Nutrition Management. 2013 Compass Group, by Morrison , Inc.
9. Pokrovskij A.A. [Conversations about nutrition]/ A.A. Pokrovskij – M.: EHkonomika, 1986. – 367 s.
10. Samsonov M.A. [Guide to Dietetics]/ Samsonov, A.A. Pokrovskij. – M.: Medicina, 1992. – 464 s.
11. Skurihin I.M. [Chemical composition of food: handbook]/ Pod red. Skurihina I.M., Tutel'yana V.A. – M.: Deli print, 2002. – 236 s.
12. Davis A. [Nutraceuticals. Nutrition for life, health and longevity]/ A./ Davis – M.: Sattva, 2004. – 544 c.

c) Electronic sources.

Internet search engines FireFox, Explorer, Opera.

Databases, reference and search systems:

1 Electronic Library System (ELS) of the RUDN University and third-party ELS, to which university students have access on the basis of concluded contracts:

- ELS of the RUDN University <http://lib.rudn.ru/MegaPro/Web>
- ELS «On-line University Library» <http://www.biblioclub.ru>
- ЭБС «Лан» <http://e.lanbook.com/>

2 Databases and search engines:

<http://docs.cntd.ru/>

- Yandex <https://www.yandex.ru/>
- Google <https://www.google.ru/>
- database SCOPUS <http://www.elsevierscience.ru/products/scopus/>
- WHO documets' database <http://whodc.mednet.ru/>
- Electronic Library by Surgery <http://surgerylib.ru/>
- database Pubmed <https://www.ncbi.nlm.nih.gov/pubmed/>

*Internet sources*

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System (RUDN ELS) <http://lib.rudn.ru/MegaPro/Web>
- EL "University Library Online" <http://www.biblioclub.ru>

- EL "Yurayt" <http://www.biblio-online.ru>
- EL "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)
- EL "Lan" <http://e.lanbook.com/>
- EL "Trinity Bridge"

2. Databases and search engines:

- electronic foundation 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 abstract database <http://www.elsevierscience.ru/products/scopus/>

*Training toolkit for self- studies to master the course \*:*

1. The set of lectures on the course “Introduction to the Nutritional Science”

\* The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

**8. ASSESSMENT TOOLKIT AND GRADING SYSTEM\* FOR EVALUATION OF STUDENTS’ COMPETENCES LEVEL UPON COURSE COMPLETION**

The assessment toolkit and the grading system\* to evaluate the competences formation level (UC-1, GPC-1, PC-16) upon the course study completion are specified in the Appendix to the course syllabus.

\* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

**DEVELOPERS:**

Senior Lecturer of the Department of Medical Elementology <hr/> position, department	<hr/> signature	A.A. Skalny <hr/> name and surname
Head of the Educational Department of Medical Elementology <hr/> position, department	<hr/> signature	A.V. Skalny <hr/> name and surname
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**HEAD OF HIGHER EDUCATION PROGRAMME:**

First Deputy Director of the  
Medical Institute

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position, department

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signature

I.V. Radysh

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name and surname