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**Federal State Autonomous Educational Institution of 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 higher education programme developer

## **COURSE SYLLABUS**

### **Introduction to 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: PC-1, PC-16.

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
PC-1	Being able to provide emergency or urgent medical care to a patient	<p>PC-1.1. Being able to assess the condition of a patient who needs emergency or urgent medical care.</p> <p>PC-1.2. Being able to recognize conditions that arise from sudden acute diseases, exacerbation of chronic diseases without obvious signs of a threat to the patient’s life and which require emergency medical care.</p> <p>PC-1.3. Being able to provide emergency medical care to patients with sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient’s life.</p> <p>PC-1.4. Being able to recognize conditions which pose a threat to the patient’s life, including conditions of clinical death (cessation of the vital bodily functions (blood circulation and/or respiration) which require emergency medical care.</p> <p>PC-1.5. Being able to provide emergency medical care to patients in conditions which pose a threat to the patient’s life, including clinical death (cessation of the vital bodily functions (blood circulation and/or respiration).</p> <p>PC-1.6. Being able to use drugs and medical devices when providing medical care in emergency or urgent forms.</p>
PC-16	Being able to use role of macro- and micronutrients of food on 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*
PC-1	Being able to provide emergency or urgent medical care to a patient	Anatomy Basics of Nursing	Normal physiology General pathology Healthy person and environment
PC-16	Being able to use role of macro- and micronutrients of food on the human body and nutritional value of food products to solving professional tasks	Medical genetics	Biochemistry Hygiene and human ecology Pharmacology 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 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			
<i>Contact academic hours</i>	<b>32</b>	<b>32</b>			
including:					
Lectures (LC)	<b>32</b>	<b>32</b>			
Lab work (LW)					
Seminars (workshops/tutorials) (S)					
<i>Self-studies</i>	<b>40</b>	<b>40</b>			
<i>Evaluation and assessment (exam/passing/failing grade)</i>					
<b>Course workload</b>	academic hours_	72	72		
	credits	2	2		

\* To be filled in regarding the higher education programme correspondence training mode.

## 5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Introduction to Nutritional science	Value nutrition in human life. Nutrition, food products and nutrients.	LC
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
Macronutrients.	Proteins. Lipids. Carbohydrates. Water. The structure, classification, properties, digestion, absorption, transportation and nutritional value of macronutrients.	LC
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
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
Nutritional value of food products.	Nutritional, biological values and dietary properties of the main groups of food products (home-cooked food and catering).	LC
Nutrition and human health.	<i>Advanced</i> approaches, principles and recommendations. Diseases associated with malnutrition. The link between food, nutrition and non-communicable diseases.	LC

\* - 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

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.	
Self-studies	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and	

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
	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

### *Main readings:*

1. 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.

### *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.

### *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"

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2. Databases and search engines:

- electronic foundation of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine [https:// www .yandex.ru/](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”
2. The laboratory workshop (if any) on the course “Introduction to the Nutritional Science”
3. The guidelines for writing a course paper / project (if any) on the course “Introduction to the Nutritional Science”.
4. ....

\* 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 (PC-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:**

Assistant professor of  
Department of  
Medical Elementology

A.A. Skalny

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position, department

\_\_\_\_\_

signature

\_\_\_\_\_

name and surname

Head of the Department of  
Medical Elementology

A.V. Skalny

\_\_\_\_\_

position, department

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signature

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name and surname

### **HEAD OF EDUCATIONAL DEPARTMENT:**

of Medical Elementology

A.V. Skalny

\_\_\_\_\_

name of department

\_\_\_\_\_

signature

\_\_\_\_\_

name and surname

**HEAD  
OF HIGHER EDUCATION PROGRAMME:**

Head of the Department  
of Nursing Management,  
Deputy Director  
of the Medical Institute

I.V. Radysh

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position, department

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signature

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name and surname