

Federal State Autonomic Educational Institution of Higher Education
«Peoples' Friendship University of Russia»

Medical Institute

Recommended MCSD

SYLLABUS
(STUDY GUIDE)

Subject

Introduction to Nutritiology

Recommended for the direction of training (specialty)

31.05.01 General Medicine

Program (profile, specialization)

General Medicine

1. Aims and objectives of discipline: the study of the theoretical foundations of classical and modern nutritiology, the formation in students of the physiological and clinical picture of the processes occurring in the human body.

2. Place of discipline in the structure of OP HE:

The discipline "**Introduction to Nutritiology**" refers to the selective part of the *disciplines of choice* (block 2).

Table №1 given preceding and following discipline aimed at forming competence discipline in accordance with the matrix competences OP HE.

Table 1. Preceding and following the discipline aimed at creating competencies

№ п/п	Code and title of competence	Preceding disciplines	Following disciplines
General Cultural Competences			
	UC-1.1; 1.2	Anatomy Basics of Nursing	Normal physiology General pathology Healthy person and environment
General Professional Competences			
	GP-1.1;1.2		Biochemistry Hygiene and human ecology Pharmacology
Professional Competences (type of professional activity medical activity)			
	P-5.10	Medical genetics	Organization of preventive work with the population Biochemistry Normal physiology Clinical Pharmacology

3. Requirements to results of development of discipline: Based on the results of the study of Introduction into Nutritiology in conjunction with other disciplines, the student should have the following general cultural, general professional and professional competences:

Emerging competencies

Code and name of the competence	Name of the competence	Indicators of competence achievement
UC-1	Able to carry out a critical analysis of problem situations based on a systematic approach, to develop a strategy for action	IUC 1.1 Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis IUC 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
GP-1	Able to implement moral and legal norms, ethical and deontological principles in professional activities	IGPC 1.1 Knows how to comply with moral and legal standards in professional activities. IGPC 1.2 Knows how to present professional information in the process of intercultural interaction, observing the principles of ethics and deontology.
P-5	Able to conduct and monitor the effectiveness of measures for the prevention and formation of a healthy lifestyle and sanitary and hygienic education of the population	IPC 5.10: Able to form healthy lifestyle programs, including programs to reduce alcohol and tobacco consumption, prevent and combat non-medical use of narcotic drugs and psychotropic substances.

As a result of study of discipline a student must:

Know:

1. The role of macro- and micronutrients of food on the metabolism in the human body.
2. Nutritional value of food products.

Be handy at:

- educational, scientific, popular scientific literature, the Internet and a training portal for professional activities;
- search for information on literary sources;

Manage:

- methods of applying the analyzes and solving specific practical and scientific problems;
- basic technologies for searching and transforming information, including using educational resources.

4. Volume of discipline and types of study

General credit value of the discipline is 2 credit units.

Type of study load	Total hours	Semesters
		1
Class hours (total)	32	32
Include:	-	-
<i>Lectures</i>	32	32

<i>Practical training (PT)</i>			
<i>Seminars (S)</i>			
<i>Laboratory research (LR)</i>			
Independent work (total)		40	40
Total labor input	hours	72	72
	Credit Unit	2	2

5. Content of the discipline

5.1. The content of the discipline sections

№	Name of the section of discipline	Contents of the section
1.	Introduction to Nutritiology	Value nutrition in human life. Nutrition, food products and nutrients.
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.
3.	Macronutrients.	Proteins. Lipids. Carbohydrates. Water. The structure, classification, properties, digestion, absorption, transportation and nutritional value of macronutrients.
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.
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.
6.	Nutritional value of food products.	Nutritional, biological values and dietary properties of the main groups of food products (home-cooked food and catering).
7.	Nutrition and human health.	Advanced approaches, principles and recommendations. Diseases associated with malnutrition. <u>The link between food, nutrition and non-communicable diseases.</u>

5.2 Discipline sections and the interdisciplinary relations

№	Name of the ensured (subsequent) disciplines	№ of the sections of this discipline necessary for the study of the ensured (subsequent) disciplines
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		1	2	3	4	5	6	7
1.	Normal physiology	+	+	+	+			
2.	Pathophysiology		+	+	+			+
3.	General Pharmacology		+		+	+	+	+
4.	Therapy		+	+	+	+		+
5.	Biochemistry		+	+	+			

5.3. Discipline sections and the activities

№ п/п	Name of the section of discipline	<i>L</i>	<i>PC</i>	<i>LR</i>	<i>S</i>	Ssgw	Total hours
1	Section 1	2	-	-	-	2	4
2	Section 2	4	-	-	-	5	9
3	Section 3	2	-	-	-	5	7
4	Section 4	10	-	-	-	10	20
5	Section 5	5	-	-	-	8	13
6	Section 6	5	-	-	-	5	10
7	Section 7	2				5	7
	Total	30				40	70

6. Laboratory practice

№	№ discipline section	Themes of practical training (seminars)	Workload (hours)
1.	Macronutrients	Structure and amino acid composition of proteins. Physicochemical properties of food proteins. Metabolism of amino acids and protein biosynthesis.	1
2.	Macronutrients	The structure and classification of food fats. The biological role of essential fatty acids. The amount of fat in food products.	1
3.	Macronutrients	The structure, classification and properties of food carbohydrates. Nutritional value of carbohydrates.	1
4.	Micronutrients	General characteristics of the physiological role of vitamins. Vitamin requirements. Avitaminosis and hypovitaminosis. Prevention of vitamin deficiency.	1
5.	Micronutrients	General functions of mineral substances. The physiological significance of individual minerals.	1

6.	Non-nutrient bioactive substances in food	Biological unalimeted components of food. Terpenes. Phenols and polyphenols. Thiols. Lignans.	1
7.	Nutritional value of food products	Water. Functions of water. Water requirements.	1
8.	Nutrition and human health	Nutritional value of food products.	1

7. Practical exercises are not provided

8. Material and technical support of the discipline:

1. Training classes equipped with multimedia projectors.
2. Computer classes, the information library center of the RUDN with access to the electronic library system of the RUDN, the Internet network.

9. Information support of the discipline:

a) Software: OS Windows XP, Windows Vista, Windows 7, a set of office programs OpenOffice.org (or MS Office 2003, 2007), Internet search engines FireFox or Internet Explorer, Opera, or other software tools for knowledge control. Databases Medline, PubMed, etc.

b) The site of the RUDN library - Access: <http://lib.rudn.ru/> - from desktop computers of the PFUR

University library ONLINE - Access: <http://www.biblioclub.ru/>

Book collections of SPRINGER publishing. - Access: www.springerlink.com

Vestnik RUDN (Series "Medicine") - Access: <http://www.elibrary.ru/defaultx.asp>

Universal database East View . - Access: <http://online.ebiblioteka.ru/>

Full-text collection of Russian scientific journals. eLibrary.ru - Access: <http://elibrary.ru/defaultx.asp?>

On-line access to journals. Information database on all branches of science and electronic delivery of documents. SwetsWise. - Access: <https://www.swetswise.com>

<http://quakes.globalincidentmap.com/> ,

<http://www.globalincidentmap.com/> ,

http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/quakes_all.php ,

http://www.thesis.lebedev.ru/forecast_activity.html

Electronic Library System RUDN - EBS RUDN: <http://lib.rudn.ru:8080/MegaPro/Web>

The educational portal of RUDN (<http://web-local.rudn.ru>);

University library online: <http://www.biblioclub.ru>

National digital resource "RUKONT": <http://rucont.ru>

IQlib: <http://www.iqlib.ru>

Science Direct: <http://www.sciencedirect.com>

EBSCO: <http://search.ebscohost.com>

Sage Publications: <http://online.sagepub.com>

Springer / Kluwer: <http://www.springerlink.com>

Taylor & Francis: <http://www.informaworld.com>

Web of Science: <http://www.isiknowledge.com>

University information system RUSSIA: <http://www.cir.ru/index.jsp>
The portal of the RUDN: <http://web-local.rudn.ru/>
Consultant of the student <http://www.studmedlib.ru>

10. Methodical support of the discipline:

a) Main literature

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 literature

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.

11. Guidelines for students on the development of the discipline (module)

The student is required to attend classes, perform the tasks of the instructor of the discipline, study with the recommended literature, etc. When attending the student it is assessed the quality of work in classes, the level of training for independent activity in the chosen field, the quality of the performance of teacher' discipline tasks, the ability to independently study the teaching material.

In practical exercises and lectures in the classrooms, the appropriate topics are analyzed using multimedia technology (computer, projector).

Independent work in class-off hours can take place both in the classroom and in the computer class, where students can study the material on presentations prepared by the Department's teachers, as well as on computer tests.

Presentations on the classes' topics can be recorded on a CD or flash card for independent work of students on a home computer.

Study guides in electronic form for a number of studying topics are posted on the Department' pages and on Department of Nursing Management and on the RUDN learning web portal, as well as on local resources of the electronic library system of the RUDN.

As one of the forms of independent work the preparation of abstracts for different sections of the course is provided.

Out-of-class independent work includes: the study of material on the textbook, manuals on paper and electronic media; preparation of abstracts on selected topics; preparation for the execution of control and test tasks.

12. Fund of assessment tools for intermediate certification of students in the discipline «Introduction into Nutritiology»

Materials for assessing the level of mastering the educational material of the discipline «Introduction into Nutritiology» (evaluation materials), including a list of competencies with an indication of the stages of their formation, a description of indicators and criteria for assessing competencies at various stages of their formation, a description of assessment scales, typical control tasks or other materials necessary to assess knowledge, skills and (or) experience of activities that characterize stages of the formation of competencies in the process of mastering the educational program, methodological materials defining the procedures for assessing knowledge, skills and (or) experience of activities that characterize the stages of the formation of competencies are developed in full and are available for students on the discipline page in TUIS RUDN.

The program is compiled in accordance with the requirements of the ES HE RUDN University.

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