

Attachment no. 3		Course program of the third cycle of studies		
1.	<b>Course title</b>	<b>ACHIEVEMENTS IN FOOD SCIENCE AND NUTRITION</b>		
2.	<b>Code</b>	<b>ITHN - 02</b>		
3.	<b>Student program</b>	<i>Innovative technologies on food and nutrition</i>		
4.	<b>Organiser of the student program (unit, institute, department)</b>	Faculty of Technology and Technical Science - Veles		
5.	<b>Degree (first, second, third cycle)</b>	Third cycle		
6.	<b>Academic year/ semester</b>	I / I	Number of ECTS credits	7
8	<b>Professor</b>	Red. Prof. D-r Dragan Damjanovski Von. Prof. Zora Uzunovska Doc. D-r Vera Simovska Doc. D-r Daniela Nikolovska - Nedelkovska Doc. D-r Tatjana Kalevska		
9	<b>Preconditions for enrolling on the course</b>	II (second) cycle of studies		
10	<b>Objectives of the course program (competences)</b>	Upgrading of knowledge regarding the food components; nutritional attributes, bioactive characteristics and changes in the components during the food storage and treatment.  Leading role in developing an innovative model in terms of new foods, national diet recommendations and implementation of process of nutritional care at the population level.		
11	<b>Contents of the course program</b>	Contemporary knowledge about the attributes of constituents food components. Nutritional characteristics of carbohydrates, proteins and lipid compounds. Food components that reduce the risk of certain diseases.  Impact of various factors (temperature, oxygen, air, enzymes, water) on the stability of certain food components. Desirable and undesirable changes in components in different food treatment (freezing and defrosting, drying, thermal treatment at high temperature).		

		<p>New technologies that enable the production of minimum processed food.</p> <p>Evaluation of the immune function in the nutritional risk group of patients.</p> <p>Creation of nutritional recommendations for improving the health of the population. Comparison between innovative visual models of nutritional recommendations for healthy eating in different population groups: Food pyramid and My plate.</p> <p>Analysis of data and harmonization of methods for future research, analysis of determinants: eating habits and physical activity, evaluation of interventions and policies aimed at improving healthy eating habits and reduction of the sedentary lifestyle.</p> <p>Reformulation of food in line with the European trends. Influence of the Mediterranean diet in the life cycle. Interaction between diet, genes and sex - progress in research on the length of telomeres as new biomarkers.</p> <p>Model and phases of the nutritional care process.</p> <p>Multidisciplinary approach and collaborative teamwork work at all stages of the standardized process of nutrition therapy, including various professionals with their own competencies.</p>		
12	<b>Methods of studying</b>			
13	<b>Total available time fund</b>	7 x 30 = 210 classes		
14	<b>Distribution of the available time</b>	50+ 50 + 50 + 60 =210		
15	<b>Forms of teaching activities</b>	15.1	<b>Lectures- theoretical instruction</b>	50
		15.2	<b>Exercises (laboratory, auditorium), seminars, teamwork</b>	50
16.	<b>Other forms of activities</b>	16.1	<b>Project exercises</b>	50

		16.2	<b>Independent exercises</b>	60	
17.	<b>Methods of assessment</b>				
	17.1.	<b>Tests</b>		80 points	
	17.2.	<b>Seminar work / project, presentation written and oral</b>		10 points	
	17.3.	<b>Activity and participation</b>		10 points	
18	<b>Assessment criteria (points/grade)</b>		<b>Up to 50 points</b>	<b>5 (five) (F)</b>	
			<b>from 51 to 60 points</b>	<b>6 (six) (E)</b>	
			<b>from 61 to 70 points</b>	<b>7 (seven) (D)</b>	
			<b>from 71 to 80 points</b>	<b>8 (eight) (C)</b>	
			<b>from 81 to 90 points</b>	<b>9 (nine) (B)</b>	
			<b>from 91 to 100 points</b>	<b>10 (ten) (A)</b>	
19.	<b>Condition for getting a signature and taking the final exam</b>				
20.	<b>Teaching language</b>				
21	<b>Method of monitoring the quality of teaching</b>				
22.	<b>Literature</b>				
	22.1.	<b>Compulsory literature</b>			
		<b>Number</b>	<b>Author</b>	<b>Title</b>	<b>Publisher / Year</b>
		1.	Tom Kaltejt	<i>Hrana – hemija na sostavnite komponenti na hranata</i>	Ars Lamina, 2011
		2.	Xiao Dong Chen, Arun S. Mujumdar	Drying Technologies in Food Processing	Blackwell Publishing Ltd, 2008
		3.	Judith A. Evans (editor)	Frozen Food Science and Technology	Blackwell Publishing Ltd, 2008
		4.	The Academy of Nutrition and Dietetics	Nutrition Care Manuals	<a href="http://www.nutritioncaremanual.org/">http://www.nutritioncaremanual.org/</a>
	5.	European Commission	European network for diet, physical activity and	<a href="http://ec.europa.eu/health/">http://ec.europa.eu/health/</a>	

			health European network for diet, physical activity and health	
	6.	Peter M Nilsson	Mediterranean diet and telomere length	BMJ 2014 4;349:g6843 doi: 10.1136/bmj.g6843
	7.			
	9.			
22.2.	<b>Additional literature</b>			
	<b>Number</b>	<b>Author</b>	<b>Title</b>	<b>Publisher / Year</b>
	1.	World Health Organization	WHO CINDI Pyramid.	2000  <a href="http://www.euro.who.int/_data/assets/pdf_file/0010/119926/E70041.pdf">http://www.euro.who.int/_data/assets/pdf_file/0010/119926/E70041.pdf</a>
	2.	Ministry of Health, Republic of Macedonia	WHO CINDI Programme of Macedonia	2002-2007  <a href="http://www.cindi.makedonija.com">www. cindi.makedonija.com</a>
	3.	U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA).	Dietary guidelines for Americans	<a href="http://www.health.gov/dietaryguidelines/2015.asp">http://www.health.gov/dietaryguidelines/2015.asp</a>