

Attachment no. 3 Course program of the third cycle of studies			
1.	Course title	INNOVATIVE TECHNOLOGIES AND MINIMAL PROCESSING IN FOOD PRODUCTION	
2.	Code	ITHN - 03	
3.	Student program	<i>Innovative technologies on food and nutrition</i>	
4.	Organiser of the student program (unit, institute, department)	Faculty of Technology and Technical Science - Veles	
5.	Degree (first, second, third cycle)	Third cycle	
6.	Academic year/ semester	1 / I	Number of ECTS credits 7
8	Professor	Red. Prof. D-r Dragan Damjanovski Von. Prof. Valentina Pavlova Von. Prof. Gorica Pavlovska Von. Prof. Anka Trajkovska Doc. D-r Tatjana Kalevska Doc. D-r Daniela Nikolovska - Nedelkovska	
9	Preconditions for enrolling on the course	II (second) cycle of studies	
10	Objectives of the course program (competences):	The student will upgrade his knowledge about innovative food treatment techniques. The student will be capable to use evidence-based approach in order to produce food with optimal nutritional value.	
11	Course title	<p>Trends in heat processes in the preparation of food. Effects of various thermal treatments on the sensory properties and nutritional quality of the food. Achievements in the process of freezing, cooling, dehydration, concentration, as well as in separation processes in food production.</p> <p>New techniques in the food preservation (ultrasound, high pressure, ohmic heating, electromagnetic radiation, etc.).</p> <p>Minimally processed food. An integrated approach to modern minimal processing of fresh produce: aspects of minimal processing of fruits and vegetables and their packaging requirements. Processing of fruits and vegetables under high pressure and vacuum technology. Application of controlled and modified atmosphere. Food extrusion.</p>	

		New technologies for improving the quality of milk and meat. Trends and innovative technologies in the production of fermented milk and meat products. Application of enzymes in the modern food industry.		
12.	Methods of studying:			
13.	Total available time fund	7 x 30 = 210		
14.	Distribution of the available time	50+50+50+60 = 210 hours		
15.	Forms of teaching activities	15.1	Lectures- theoretical instruction	50
		15.2	Exercises (laboratory, auditorium), seminars, teamwork	50
16.	Other forms of activities	16.1	Projects / Independent tasks	50
		16.2	Home learning	60
17.	Начин на оценување			
	17.1.	Tests/oral exam	80 points	
	17.2.	Seminar work / project, presentation (written and oral)	10 points	
	17.3.	Activity and participation	10 points	
18.	Assessment criteria (points/grade)		Up to 50 points	5 (five) (F)
			from 51 to 60 points	6 (six) (E)
			from 61 to 70 points	7 (seven) (D)
			from 71 to 80 points	8 (eight) (C)
			from 81 to 90 points	9 (nine) (B)
			from 91 to 100 points	10 (ten) (A)
19.	Condition for getting a signature and taking the final exam			
20.	Teaching language	Macedonian, English		

21	Method of monitoring the quality of teaching				
22.	Literature				
	22.1.	Compulsory literature			
		Author	Title	Publisher, Year	
	1.	Rastall R. (ed.)	Novel enzyme technology for food applications	Woodhead Publ. Cambridge, UK, 2007	
	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.	Robin Guy	Extrusion cooking Technologies and applications	Woodhead Publishing Limited and CRC Press LLC, 2001	
	5.	L.M.L. Nollet and F. Toldra	Advanced technologies for meat processing	Boca Raton, FL: CRC Press, Taylor & Francis Group, 2006	
	6.	Smit G.	Dairy processing: Improving quality	Woodhead Publishing Limited & CRC Press LCC, New York, 2003	
	7.	Wim Jongen	Fruit and vegetable processing Improving quality	Woodhead Publishing Ltd, 2002	
		8.		Selected scientific papers on appropriate topics	
	22.2.	Additional literature			
	Author	Title	Publisher, Year		
	1.				
	2.				
	3.				