

Attachment no. 3		Course program of the first, second and third cycle of studies		
1.	Course title	CHEMISTRY OF IMPORTANT FOOD COMPONENTS		
2.	Code	ITHN-07		
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		
5.	Degree (first, second, third cycle)	Third cycle		
6.	Academic year/ semester	1 / II	Number of ECTS credits	5
8.	Professor	Vonr.prof.d-r Gorica Pavlovska Vonr.prof.d-r Valentina Pavlova		
9.	Preconditions for enrolling on the course	II (second) cycle of studies		
10.	Objectives of the course program (competences) Students will become familiar with important food components, their properties, structure, inter and intra molecular responses between food components that lead to a change in food quality.			
11.	Contents of the course program <ul style="list-style-type: none"> - Water- (water activity, phase diagram, water interactions with other food components) - Proteins- (structure, properties, intra and inter molecular reactions with other food components) - Lipids (homolipids, heterolipids, complex lipids) – (structure, properties, esterification reactions, polymerization, cyclization, etc.) - Carbohydrates - (structure, properties, reactions to oxidation, caramelization, Maillard reactions, etc.) - Vitamins- (structure, properties, reactions in which they change, etc.) - Pigments- (structure and reactions in which they change) - Aromas- (properties and reactions in which they change) - Minerals in food- interaction with organic food ingredients: protein, lipids, carbohydrates, organic acids, flavonoids, etc. - Enzymes in food and their impact on food quality - Additives (preservatives, sweeteners, colors, flavours) – interactions with other food ingredients 			
12.	Methods of studying			
13.	Total available time fund	5 x 30 = 150 classes		
14.	Distribution of the available time	50 + 30 + 30+10+30 = 150		
15.	Forms of teaching activities	15.1	Lectures- theoretical instruction	50
		15.2	Exercises (laboratory, auditorium), seminars, teamwork	30
16.	Other forms of activities	16.1	Project exercises	30
		16.2	Independent exercises	10
		16.3	Home studying	30
17.	Methods of assessment			80
	17.1	Tests: 2 exams during the teaching process or written exam with duration of 2 hours		

	17.2	Seminar work / project, presentation written and oral			10
	17.3	Activity and participation			10
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 (if there is a necessity it can ne teach in English)	
21.	Method of monitoring the quality of teaching				
22.	Literature				
	Compulsory literature				
22.1	Number	Author	Title	Publisher	Year
	1.	H.-D.Belitz, W.Grosch, P. Schieberle	Food chemistry	Springer	2009
	2.	S. Damodaran , K. Parkin, O.R. Fennema	Fennemans' Food Chemistry	CRC Press	2007
	Additional literature				
22.2	Number	Author	Title	Publisher	Year
	1.	T. P. Coultate (2009)	Food - The Chemistry of Its Components	5 th ed., The Royal Society of Chemistry, Cambridge, UK	2009