

Order number: 16

<b>Attachment No. 3</b>		<b>Subject program of the second cycle of studies</b>						
1.	Title of the teaching subject	Fermentology						
2.	Code	FE2M35						
3.	Study program	Food Engineering-Innovation, Sustainability and Technologies						
4.	Organizer of the study program (unit, i.e. institute, department, department)	TMF						
5.	Degree (first, second, third cycle)	second						
6.	Academic year / semester	Year	1	semester	2			
7.	Course load expressed in ECTS credits							
8.	Teacher (in the case of multiple teachers designated responsible teacher*)	Dr. Irina Mladenoska, professor*, Dr. Donka Doneva Shapcheska, professor.						
9.	Language of instruction	English						
10.	Necessary prerequisites for listening and passing the subject							
11.	Objectives of the subject program (competencies) and learning outcomes:							
12.	Detailed course content by chapter and unit with learning outcomes for each chapter	Fermented food (fermented meat products, fermented fruit and vegetable products, fermented beverages, fermented products obtained from cereals, etc.), acidifiers obtained by fermentation and their application in food preservation, yeast production, new technologies in the production of fermented food (genetic engineering, immobilization, etc.), use of high pressure canning, pulsed electric field, and gamma irradiation in fermented food technology products, using thermal and non-thermal processes for preserving unfermented food.						
13.	Interrelationship of subjects							
14.	Detailed description of teaching and working methods for the subject							
15.	Total available fund on time							
16.	Forms of teaching activities	16.1.	Lectures - theoretical teaching. hours					
		16.2.	Exercises (laboratory, classroom), seminars, teamwork: lessons					
		16.3.	Practice: classes					
17.	Other forms of activities	17.1.	Project assignments: lessons					
		17.2.	Independent assignments: lessons					
		17.3.	Home study - assignments					
18.	Conditions of signature							
19.	Method of assessment							
	19.1.	Tests: points						
	19.2.	Seminar work/project, written and oral presentation: points						
	19.3.	Final exam: points						
20.	Evaluation criteria (points/grade)			up to 50 points	5 (five) (F)			
				51 x to 60 points	6 (six) (E)			
				61 x 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)		
21.	A method of monitoring the quality of teaching				
	Literature				
	Required reading				
	Ord. number	Author	Title	Publishe r	Year
22.1.	1.	Sandeep Kumar Panda, Prathapkumar Halady Shetty	Innovations in technologies for fermented food and beverage industries	Springer	2018
22.	2.				
	3.				
	Additional literature				
	Ord. number	Author	Title	Publishe r	Year
22.2.	1.				
	2.				
	3.				