

<b>Study programme:</b> Food Technology		
<b>Type and level of study:</b> Bachelor's degree (240 ECTS) – First cycle		
<b>Course title:</b> <i>Technology of bread, bakery and pasta products</i>		Code: TD6
<b>Lecturer:</b> Associate Prof. Marko Petković, Ph. D.		
<b>Language of instruction:</b> English		
<b>ECTS credits:</b> 5		
<b>Prerequisite:</b> /		
<b>Semester:</b> summer		
<b>Course objective</b> Acquiring comprehensive scientific knowledge of key raw materials, including various types of flour, biochemical and chemical components essential for dough fermentation and growth, additives, and specialty fats—critical for producing bread, bakery, and pasta products. Training students in independently managing and overseeing the technological processes involved in the industrial-scale production of these products, applying their technical knowledge practically. Understanding ingredient selection, process optimization, and quality control measures to ensure consistent product quality and operational efficiency in manufacturing facilities.		
<b>Learning outcomes</b> Developing the necessary knowledge and skills to independently manage and oversee the production processes of bread, bakery, and pasta products. Focusing on the application of various control and monitoring methods to ensure that the technological processes throughout production meet established quality, safety, and efficiency standards. Implementation effective production management and quality assurance practices within industrial bakery and pasta manufacturing environments.		
<b>Course contents</b> <i>Theoretical instruction</i> This study involves a detailed examination and characterization of the quality of primary and supplementary raw materials, as well as the production processes for bread, bakery, and pasta products. It covers the theoretical principles governing the functionality of essential dough ingredients across various bread, pastry, and pasta types. The curriculum addresses the distinct technological processes involved in manufacturing these products and includes rigorous assessment of both raw material and finished product quality. Attention is given to the physical, chemical, and biochemical transformations occurring in the dough throughout preparation, processing, and final shaping. Furthermore, the impact of production parameters on the finished product quality is evaluated. Lastly, a detailed analysis of equipment specifications for processing bread, bakery, and pasta products is included to understand technological capabilities and limitations. <i>Practical instruction</i> The analysis and determination of the quality of raw materials used in bread, bakery, and pasta production, alongside the evaluation of finished products, constitute a core component of this program. It includes sensory assessment methods to ensure product acceptability and compliance with quality standards. Practical laboratory and industrial exercises are conducted to simulate production conditions, enabling students to apply analytical techniques and quality control measures in real-world manufacturing scenarios. This comprehensive approach fosters proficiency in both theoretical and practical aspects of raw material evaluation, product testing, and process optimization within bakery and pasta production environments.		
<b>Literature</b> 1. Auerman L. J.: Tehnologija pekarske proizvodnje, prevod, Tehnološki fakultet, Novi Sad, 1988. 2. Kaluđerski G., Filipović N.: Metode ispitivanja kvaliteta žita, brašna i gotovih proizvoda, Tehnološki fakultet, Novi Sad, 1998. 3. Pylar E.J., Gorton L.A.: Baking Science and Technology, Vol.1 (2008) Sosland Publ. Company, Kansas City, USA. 4. Simpson B. K. (2012): Food Biochemistry and Food Processing, Second Edition, Wiley-Blackwell, John Wiley & Sons, Inc. 5. Cauvain, S. P., & Clark, R. H. (2019). Baking technology and nutrition: Towards a healthier world. John Wiley & Sons.		
<b>Hours of active teaching:</b> 3+0+2	<b>Theoretical:</b> 3×15=45	<b>Practical:</b> 2×15=30
<b>Teaching methods</b> • Interactive teaching, using video presentations. • Individual consultations related to problems arising in theoretical and practical classes, and laboratory exercises.		
<b>Assessment (maximum points 100)</b>		

<b>Examination requirements</b>	points	<b>Final exam</b>	points
Class participation	5	Written exam	
Practical participation sessions/tests	5	Oral exam	45
Class tests	30		
Practical tests	15		
Other			
<b>Grading system</b>			
<b>Grade</b>	<b>ECTS</b>	<b>Description</b>	
10	91-100	Excellent	
9	81-90	Exceptionally good	
8	71-80	Very good	
7	61-70	Good	
6	51-60	Passing	