

<b>Study programme:</b> Food Technology			
<b>Type and level of study:</b> Bachelor's degree (240 ECTS) – First cycle			
<b>Course title:</b> Technology of chocolate and cocoa products			Code: TI23
<b>Lecturer:</b> Associate Prof. Marko Petković, Ph. D.			
<b>Language of instruction:</b> English			
<b>ECTS credits:</b> 7			
<b>Prerequisite:</b> /			
<b>Semester:</b> autumn			
<b>Course objective</b> Acquiring scientific knowledge about raw materials (fats, cocoa beans, sugar, emulsifiers, flavors, etc.) which is for the production of chocolate and cocoa products. Acquaintance with technological, physicochemical, and biochemical processes (thermal treatment, homogenization, crushing, crystallization, shaping, packaging, storage) in the production of chocolate and cocoa products, applying certain acquired technological knowledge.			
<b>Learning outcomes</b> Acquired scientific knowledge about the production process of chocolate and cocoa products. Training in the use of different methods of controlling the technological processes of the production of chocolate and cocoa products, as well as finished products.			
<b>Course contents</b> <i>Theoretical instruction</i> Study of cocoa beans as the basic raw material for the production of chocolate and cocoa products. Physical and chemical properties of cocoa butter and special fats. Additives in confectionery products. Preparation of chocolate mass and formation of rheological properties of chocolate and cocoa mass. Shaping, crystallization, stabilization, packaging, and storage of chocolate and cocoa products. Production of cocoa creams and chocolate-like products. <i>Practical instruction</i> Analysis and determination of the quality of raw materials for the production of chocolate and cocoa products, as well as the finished product. Sensory evaluation of chocolate and cocoa products. Production of chocolate and cocoa products on a laboratory ball mill. Industrial exercises.			
<b>Literature</b> 1. Gavrilović, M. (2000): Tehnologija konditorskih proizvoda. Tehnološki fakultet, Novi Sad. 2. Pajin, B. (2009): Praktikum iz tehnologije konditorskih proizvoda. Tehnološki fakultet, Novi Sad. 3. Pajin, B. (2014): Tehnologija čokolade i kakao proizvoda. Tehnološki fakultet, Novi Sad.4. Beckett, S., Mark, S., Ziegler, 4. G. R. (2017): Beckett's Industrial Chocolate Manufacture and Use, 5th Edition, Wiley-Blackwell, ISBN: 978-1-118-78014-5. 5. Petković, M. (2021). Tehnologija čokolade i kakao proizvoda (praktikum). Agronomski Fakultet, Čačak.			
<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	