

Study programme: <b>Food Technology</b>			
Type and level of study: Bachelor's degree (240 ECTS) – First cycle			
<b>Course title: Carbohydrate Technology 2</b>			
<b>Lecturer:</b> Ass. Prof. Pavle Mašković, PhD			
<b>Teacher/Instructor (practical sessions):</b> Ass. Mirjana Radovanović			
<b>Language of lecture/instruction:</b> English			
ECTS credits: 5		Status (compulsory/elective): <b>compulsory</b>	
Prerequisite: None			
Semester: <i>autumn</i>			
<b>Course objective</b> To provide knowledge required to successfully control the production of starch and starch hydrolysis products, and monitor product quality.			
<b>Learning outcomes</b> Students will acquire knowledge required for proper control of the starch production process and development of starch products used in other industries, and will be able to adjust starch products to achieve desired quality.			
<b>Course contents</b> <i>Theoretical instruction</i> Raw materials for starch production (maize, wheat, potato, rice, tapioca); physicochemical characteristics of starch; maize starch process (maize delivery and unloading, cleaning, steeping, separation of the grain into its component parts, starch washing, drying and storage, maize wet milling by-products). Potato starch process (potato delivery and unloading, rasping, cellular juice separation, pulp removal, starch extraction, starch concentration, refining, washing and drying). Wheat starch process (the Martin process and the batter process). Rice starch process. Tapioca starch process. Starch hydrolysis: acid, enzymatic and acid/enzymatic hydrolysis. Production of starch syrups, crystalline glucose, fructose syrups and other sweeteners. Starch derivatives. <i>Practical instruction</i> Starch isolation, starch hydrolysis, starch retrogradation, quality control of starch products, on-site practical sessions in an industrial environment.			
<b>Recommended reading</b> Carbohydrates – Comprehensive Studies on Glycobiology and Glycotechnology. Available at: <a href="http://dx.doi.org/10.5772/2702">http://dx.doi.org/10.5772/2702</a> . Edited by Chuan-Fa Chang. Published by InTech Janeza Trdine 9, 51000 Rijeka, Croatia. ISBN 978-953-51-0864-1. Carbohydrates in Food, second edition. Edited by Ann-Charlotte Eliasson. © 2006 by Taylor & Francis Group, LLC. CRC Press, Taylor & Francis Group, 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, FL 33487-2742. ISBN 0-8247-5942-7 Wrolstad, Ronald E., 1939 – Food carbohydrate chemistry / Ronald E. Wrolstad. – 1st ed. p. cm. – (Institute of food technologists series; 48) Includes bibliographical references and index. ISBN 978-0-8138-2665-3 (hardback) ©2012 by John Wiley & Sons, Inc. and Institute of Food Technologists. Starch: Chemistry and Technology. Third Edition, Edited by James BeMiller and Roy Whistler. Academic Press is an imprint of Elsevier. 30 Corporate Drive, Suite 400, Burlington, MA 01803, USA. ISBN: 978-0-12-746275-2			
<b>Hours of active teaching</b>			<b>Other classes</b>
Lectures:	Practicals: 3x15=45	Other forms of teaching Tutorials 2x15=30 Individual work:	
<b>Teaching methods</b> Interactive teaching combined with video presentations. Office hours open to individual students related to problems occurring during theoretical and practical instruction, and laboratory sessions.			
<b>Assessment (maximum points 100)</b>			
<b>Examination requirements</b>	<b>Points</b>	<b>Final examination</b>	<b>Points</b>
Class participation	5	oral examination	
Participation in practicals	5		
Practical sessions/tests	25	written examination	55
Term paper assignments/homework	10	.....	
Project			
Other			

<b>Grading system</b>		
<b>Grade</b>	<b>ECTS</b>	<b>Description</b>
<b>10</b>	<b>91-100</b>	Excellent
<b>9</b>	<b>81-90</b>	Exceptionally good
<b>8</b>	<b>71-80</b>	Very good
<b>7</b>	<b>61-70</b>	Good
<b>6</b>	<b>51-60</b>	Passing
<b>5</b>	<b>≤50</b>	Failing