

NAME OF THE COURSE		Food Carbohydrate Chemistry					
Code	PPC311 (96943)	Year of study	3 rd ungratuated study				
Course teacher	Dr Renata Odžak, Associate Professor	Credits (ECTS)	2				
Associate teachers	-----	Type of instruction (number of hours)	L	S	E	F	
			30	0	0	0	
Status of the course	optional	Percentage of application of e-learning	20%				
COURSE DESCRIPTION							
Course objectives	Students will take the knowledge of the structure, synthesis and functions of different types carbohydrates present in the food.						
Course enrolment requirements and entry competences required for the course	Laid General Chemistry 1 and 2 and the attended Organic Chemistry 1 and 2						
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>After completing this course students will:</p> <ul style="list-style-type: none"> - to distinguish between simple and complex carbohydrates in its structure - learn running carbohydrates (stereo) in several ways - learn to divide carbohydrates to D-and L-series - be able to indicate different types of connections in glycosides - know write reaction formation glycoside 						
Course content broken down in detail by weekly class schedule (syllabus)	<p><u>Lecturers:</u></p> <ol style="list-style-type: none"> 1. Introduction to the chemistry of carbohydrates - definition, importance and classification, Monosaccharides (structure, nomenclature, stereochemistry, anomeric C atom) 2. Fischer projection formula, the D- and L-sugars, hemiacetal and hemiketal, epimers 3. Cyclic forms of carbohydrates (the ratio Haworth formulas and conformational structures), the cyclic display of glucose, fructose, galactose 4. Conformation of monosaccharides (anomeric effect), Mutorotation 5. i 6. The reactions of monosaccharides (reducing the alditols, by oxidation to aldonic acid oxidation of the monosaccharide to a weak oxidants) 7. and 8. Glycosides (structure, O-, S- N-glycosides, natural glycosides, formation and hydrolysis of the glycoside) 9. and 10. Disaccharides (reducing and non-reducing sugars, sucrose, lactose, maltose), polysaccharides (cellulose, starch, glycogen, amylose, kitin- structural features and biological properties) 11. and 12. Amino sugars, (synthesis and properties) Deoxy sugars (synthesis and properties), Analysis of carbohydrates 13. and 14. Protecting groups in carbohydrates 						
Format of instruction	x lectures <input type="checkbox"/> seminars and workshops <input type="checkbox"/> exercises <input type="checkbox"/> <i>on line</i> in entirety <input type="checkbox"/> partial e-learning <input type="checkbox"/> field work		<input type="checkbox"/> independent assignments x multimedia <input type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)				
Student responsibilities	Active participation in lectures.						
Screening student work (<i>name the</i>	Class attendance	0,5	Research		Practical training		

<i>proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)</i>	Experimental work		Report	0,5	(Other)	
	Essay		Seminar essay		(Other)	
	Tests		Oral exam	1,0	(Other)	
	Written exam		Project		(Other)	
Grading and evaluating student work in class and at the final exam	Oral way of examination.					
Required literature (available in the library and via other media)	Title			Number of copies in the library	Availability via other media	
	Food carbohydrate Chemistry, R. E. Wrolstad, Wiley-Blackwell, 2012.			1	yes	
	Organic chemistry, P.Y. Bruice, Pearson Prentice Hall, 2006			2	yes	
	Monosacharide chemistry, R. J. Ferrier and P. M. Collins, Penguin Books, Harmondsworth, 1972			1	yes	
Optional literature (at the time of submission of study programme proposal)	Essentials of Carbohydrate Chemistry and Biochemistry, T. K. Lindhorst, Wiley-VCH, 2003.					
Quality assurance methods that ensure the acquisition of exit competences	Anonymous student surveys, consultations with students.					
Other (as the proposer wishes to add)						