

NAME OF THE COURSE		Chemistry of Natural Compounds				
Code	PPC217	Year of study	1st graduated study			
Course teacher	Dr Renata Odžak, Associate Professor	Credits (ECTS)	2			
Associate teachers	-----	Type of instruction (number of hours)	L	S	E	F
			15	0	15	
Status of the course	Elective	Percentage of application of e-learning	20%			
COURSE DESCRIPTION						
Course objectives	Introduce students with some natural organic compounds, various isolation and identification techniques as well as their biological importance.					
Course enrolment requirements and entry competences required for the course	None.					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>After completion of the course, the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the structure of natural organic compounds. 2. Explain their physical and chemical properties. 3. Compare the structure of natural compounds and their chemical reactivity. 4. Follow the instructions given for the methods of isolation, purification and identification of natural compounds using conventional laboratory techniques. 					
Course content broken down in detail by weekly class schedule (syllabus)	<p>Lectures:</p> <ol style="list-style-type: none"> 1. Introduction to natural compounds. (1 hour) 2. Isolation, division and determination of the structure of natural compounds. (3 hours) 3. Carbohydrates: structural types, nomenclature, stereochemistry of monosaccharides, reaction of carbonyl and hydroxyl groups of monosaccharides, glycosides, oligosaccharides and polysaccharides, structural characteristics and biological properties of glycogen, starch ... (3 hours) 4. Aromatic compounds: division, chemical structure and biosynthesis, chicic acid, tannins, coumarin, lignin, aromatic polyketides, flavonoids. (2 hours) 5. Terpenes and terpenoids: division, properties, determination of terpenoid structure and biological effect of major representatives. (2 hours) 6. Alkaloid: division, structural characteristics, outputting in nature, isolation and determination of structure and the biological effect of major representatives. (2 hours) 7. Vitamins and minerals. (2 hours) <p>Exercises:</p> <p>Through classroom exercises, various techniques of isolation, purification and identification of organic compounds are used.</p> <ol style="list-style-type: none"> 1. Determination of polyphenols in fruit fruits. 2. Isolation of cholesterol and lecithin from egg yolks. 3. Determination of antioxidant capacity. 4. Use various tests to prove carbohydrates and complex sugar hydrolysis. 5. Isolation of carotene from Carrot. 6. Isolation of piperine from Pepper. 7. Influence of temperature on the stability of vitamin C in fresh fruit. 					
Format of instruction	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> seminars and workshops <input checked="" 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 <input type="checkbox"/> multimedia <input checked="" type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)			

Student responsibilities	Attend lectures and possibly present yourself to a chosen topic in the form of Powerpoint presentations.					
Screening student work (<i>name the 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>)	Class attendance		Research		Practical training	
	Experimental work	0.5	Report		Exam preparation	0,3
	Essay		Seminar essay	0.5	(Other)	
	Tests		Oral exam	1.0	(Other)	
	Written exam		Project		(Other)	
Grading and evaluating student work in class and at the final exam	All exercises must be done, students are required to keep a log of the work in which they enter the results of the experiment that is being reviewed. The written exam also includes questions from the exercise, and for the pass grade it is necessary to solve at least 50% of the exam.					
Required literature (available in the library and via other media)	Title				Number of copies in the library	Availability via other media
	PowerPoint presentations and scripts prepared for the exercises from the module.					yes
	Scientific papers on selected topic.					yes
Optional literature (at the time of submission of study programme proposal)	V. Rapić, Postupci priprave i izolacije organskih spojeva, Školska knjiga, Zagreb, 1994. J. Mann, R. S. Davidson, J. B. Hobbs, D. V. Banthorpe, J. B. Harborne, Natural Products, Addison Wesley Longman Limited, Edinburgh Gate, 1996.					
Quality assurance methods that ensure the acquisition of exit competences	Consultations, student survey for subject and teacher evaluation, attendance attendance records.					
Other (as the proposer wishes to add)						