

NAME OF THE COURSE		Natural biologically active compounds				
Code	PPC213	Year of study	3 <sup>rd</sup> undergraduate study			
Course teacher	Dr Renata Odžak, Associate Professor	Credits (ECTS)	2.0			
Associate teachers		Type of instruction (number of hours)	L	S	E	F
			15		15	
Status of the course	optional	Percentage of application of e-learning	10%			
COURSE DESCRIPTION						
Course objectives	Familiarize the various biologically active substances, their role in the natural producer and their impact on the human organism.					
Course enrolment requirements and entry competences required for the course	No conditions.					
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"> <li>1. differentiate and classify natural compounds that play a significant role in different branch biotechnologies,</li> <li>2. describe the structure of natural organic compounds and explain that physical and chemical properties,</li> <li>3. compare the structure of natural organic compounds and their chemical reactivity,</li> <li>4. investigate according to the given instructions the gradual isolation, purification and identification of some biologically active compounds appropriate to the usual laboratory techniques.</li> </ol>					
Course content broken down in detail by weekly class schedule (syllabus)	<p>lectures:</p> <ol style="list-style-type: none"> <li>1. Introduction to natural compounds. (1 hour)</li> <li>2. Aromatic compounds: division, shikimic acid, tannins, coumarins, flavonoids (3 hours)</li> <li>3. Lipids: division and nomenclature, characteristic reactions and representatives of the lipid group. (2 hours)</li> <li>4. Terpenes and terpenoids. (2 hours)</li> <li>5. Prostaglandins: basic chemical structure, properties, division and action in the human body. (2 hours)</li> <li>6. Alkaloids: division, properties and biological effect of important representatives. (2 hours)</li> <li>7. Vitamins and minerals (2 hours)</li> </ol> <p>exercises:</p> <ol style="list-style-type: none"> <li>1. Isolation of phenolic compounds from plant material and / or oil (3 hours)</li> <li>2. Determination of mass fraction of total phenolic compounds in isolates (spectrophotometric) (3 hours)</li> <li>3. Determination of tocopherols in olive oil (3 hours)</li> <li>4. Determination of buckwheat routines (3 hours)</li> <li>5. Testing of oxidation capacity in isolated samples by ORAC and DPPH method (3 hours)</li> </ol>					
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 type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)			
Student responsibilities	Attending lectures and exposing 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	0.5	Research		Practical training	
	Experimental work	0.5	Report		(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	Presentation of the Power Point presentation on selected theme with focus on role, mode of action and chemical material.					
Required literature (available in the library and via other media)	<b>Title</b>				<b>Number of copies in the library</b>	<b>Availability via other media</b>
	Scientific papers on selected topic.					
Optional literature (at the time of submission of study programme proposal)						
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)						