


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
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 FUNDUSZ SPOŁECZNY


Course title		ECTS code	
Blue biotechnology		13.8.1103	
Name of unit administrating study			
null			
Studies			
faculty	field of study	type	second tier studies (MA)
Faculty of Oceanography and Geography	Oceanography	form	full-time
		specialty	Biological Oceanography
		specialization	all
Teaching staff			
prof. dr hab. Hanna Mazur Marzec; dr Agata Błaszczuk			
Forms of classes, the realization and number of hours		ECTS credits	
Forms of classes		6	
Laboratory classes, Lecture		Classes that require direct contribution of the academic teacher:	
The realization of activities		Number of ECTS points: 3	
classroom instruction		Total number of hours: 78	
Number of hours		Form of activity and number of hours:	
Laboratory classes: 45 hours, Lecture: 30 hours		- lectures: 30	
		- practical training: 45	
		- exam: 2	
		- consultations: 1	
		Students' unassisted work	
		Number of ECTS points: 3	
		Total number of hours: 75	
		Form of activity and number of hours:	
		- preparing for the exam / credit (studying literature):	
		20	
		- activities of practical nature (preparing for classes, self-handling of the research and project tasks etc.):	
		55	
The academic cycle			
2023/2024 winter semester			
Type of course		Language of instruction	
- an elective course - obligatory		english	
Teaching methods		Form and method of assessment and basic criteria for evaluation or examination requirements	
- conducting experiments - multimedia-based lecture		Final evaluation	
		- Graded credit - Examination	
		Assessment methods	

	<ul style="list-style-type: none"> - written exam with open questions - graded course credit based on individual grades obtained during the semester - A. Assessment methods <ul style="list-style-type: none"> - graded assignment - exam B. Forms of assessment <ul style="list-style-type: none"> - written exam with open question/tasks - the rating is determined on the basis of the marks received during the semester (colloquium, conducting research and presenting its outcomes: written and oral) <p>The basic criteria for evaluation</p> <p>Lecture - Knowledge of the presented material. The student will be allowed to take the final exam on condition that she/he passes the discussions/laboratories.</p> <p>Practical training - Knowledge of the presented material. The ability to assess the biological activity of organic compounds in microbiological, biochemical and cell line tests. The ability to isolate and to conduct quantitative and qualitative analysis of organic compounds. Attendance.</p> <p>According to regulations at UG, student should get at least 51% of the total score and the achievement of the educational results.</p>
Method of verifying required learning outcomes	
Required courses and introductory requirements	
<p>A. Formal requirements</p> <p>B. Prerequisites</p> <p>Basic knowledge in biology and general chemistry</p>	
Aims of education	
<p>Goals of the course</p> <p>Mastering knowledge about the key marine organisms and their products used in biotechnology.</p> <p>Familiarizing with the methods used in the analysis of marine natural products and in assessment of their biological activity</p>	
Course contents	
<p>Program content: A. Issues taken during lectures: A.1. Short history and basic concepts of marine biotechnology; A.2 Low added value products of marine organisms; A.3 High added value products of marine organisms (biomaterials, pharmaceuticals, nutraceuticals, food supplements, groceries, cosmetics) A.4. How to obtain natural products for commercial use; A.5. Assessment of pharmaceutical potential of marine natural products; A.6. From discovery to application; B. Issues taken during laboratories: B.1. Biochemical tests in bioactivity assessment of natural products; B.2. Cytotoxicity of natural products; B.3. Antibiotic activity of natural products; B.4. Isolation of natural products from biomass of marine organisms; B.5. Application of LC-MS/MS and NMR in structural analysis of natural products;</p>	
Bibliography of literature	
<p>A. Literature required to pass the course (exam):</p> <p>A.1. used during the lectures</p> <p>Se-Know KIM, 2015. Handbook of Marine Biotechnology. Springer</p> <p>A.2. studied independently by student</p> <p>Szczepaniak W., 2011, Metody instrumentalne w analizie chemicznej. PWN, Warszawa</p> <p>Patric Graham; 2019. Chemia medyczna, PWN</p> <p>B. Additional literature</p> <p>Selected articles from the journal "Marine Drugs"</p>	
<p>The learning outcomes (for the field of study and specialization)</p> <p>K_W04; K_U04; K_K04</p>	<p>Knowledge</p> <p>K_W04: Knows and understands the biotechnological potential of marine natural products</p>
	<p>Skills</p> <p>K_U03 She/he is able to elaborate the results of the conducted experiments and present a correct conclusions</p>
	<p>Social competence</p>

	K_K04 She/he is willing to critically assess the acquired knowledge in the field of natural sciences
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Contact

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