KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI
Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego
UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ SPOŁECZNY

Course title	ECTS code
Ecological assessment of aquatic environments	13.8.0920

Name of unit administrating study

Faculty of Oceanography and Geography

Studies

faculty	field of study		
Faculty of Oceanography and Geography	Oceanography	type	first tier studies (BA)
		form	full-time
		specialty	all
		specialization	all

Teaching staff

dr Aleksandra Zgrundo; prof. UG, dr hab. Katarzyna Smolarz

Forms of classes, the realization and number of hours

Forms of classes

Wykład (to translate), Ćw. audytoryjne (to translate)

The realization of activities

lectures in the classroom, outdoor activities

Number of hours

Wykład (to translate): 30 hours, Ćw. audytoryjne (to translate): 45 hours

ECTS credits

5
Participation in classes
The number of ECTS: 3
The total number of hours: 90
- participation in lectures: 30
- participation in practicals: 45
- participation in exam/assessment: 2
- participation in consultations: 13

Student's own work
The number of ECTS: 2
The total number of hours: 60
- preparation for final exam/assessment: 30
- practicals: 30

2021/2022 summer semester

Type of course

elective (to translate)

Language of instruction

english

Teaching methods

- Metoda projektów (projekt badawczy, wdrożeniowy, praktyczny) (to translate)
- Wykład konwersatoryjny (to translate)
- Wykład z prezentacją multimedialną (to translate)

Form and method of assessment and basic criteria for eveluation or examination requirements

Final evaluation

- Zaliczenie na ocenę (to translate)
- Egzamin (to translate)

Assessment methods

- egzamin pisemny testowy (to translate)
- egzamin pisemny z pytaniami (zadaniami) otwartymi (to translate)
- wykonanie pracy zaliczeniowej - projekt lub prezentacja (to translate)
- Lecture: positive mark from a written examination containing information presented in the lectures according to the regulations of the University of Gdańsk
  Practicals: student project, assessment of student activity during each step of the project, attendance

The basic criteria for evaluation

	Lecture: positive mark from a written examination containing information presented in the lectures according to the regulations of the University of Gdańsk Practical classes: Assessment of the project presentation, assessment during all stages of the project, attendance

Sposób weryfikacji założonych efektów kształcenia (DO TŁUMACZENIA)

Required courses and introductory requirements

A. Formal requirements

None

B. Prerequisites

Elementary knowledge of ecology

Aims of education

To introduce students with different surveying and monitoring methods used in biological assessments of water environment. To enable critical scrutiny of use proper tools and methods in water environment monitoring and adequate interpretation of data.

Course contents

A. Contents of lectures
A.1 The introduction to the principles of biological methods used in monitoring of marine environments.
A.2 The technics and methods used in biological monitoring based on plant and animal communities and biomarkers.
A. 3 The best practices in the assessment of water environemt status based on EU and Polish regulations
B. Contents of practicals
B.1 The preparation of project aiming to assess the water environment status in one of the regions of the Gulf of Gdansk.
B.2 Field trip/research cruise to learn and practise methods used for gainig various biological material for water monitoring, obtaining material for plant and animal communities analysis, discussion over the best practices.
B.3 Quantitative and qualitative analysis of plant and animal communities for the assessment of water environment status.
B.4. The use of cytogenetic methods for the assessment of water environment - mussels case study.
B.5 The analysis of data gathered for the assessment of water environment.
B.6 The preparation and presentation of the report.

Bibliography of literature

A. Literature:
A.1. used during lectures and practicals:
Markert B.A., Breure A.M., & Zechmeister Z.G., 2003, Bioindicators and Biomonitors, Elsevier, ISBN 0080441777
Perry J., Vanderklein E., 2002, Water quality. Management of a Natural Resource, Blackwell Science, ISBN 0-86542-469-1, s. 639
Walker C.H., Sibly R.M., Peakall D.B, 2001, Principles of Ecotoxicology, Third Edition [Paperback], Taylor & Francis Group, ISBN 0-7484-0940-8
publications concerning biological assessment of water environment, key documents concerning water protection and monitoring in UE and Poland
A.2. literature for self-studying
publications concerning biological assessment of water environment, key documents concerning water protection and monitoring in UE and Poland
B. Additional literature
Greenberg B., Hull R.N., Roberts M.H., Gensemer R.W., 2001, Environmental Toxicology and Risk Assessment: Science, Policy, and Standardization- Implications for Environmental Decisions, 10th Volume, ASTM International, ISBN 978-0-8031-2886-6
Fossi M.H., Leonsio C., 1994, Nondestructive biomarkers in Vertebrates, Levis Publishers, Baca Raton
Bellinger E.G., Sigee D.C., 2010, Freshwater algae: identification and use as bioindicators, Wiley-Blackwell, ISBN 978-0-470-05814-5

P6U_W: P6S_WG - K_W04; P6S_WK - K_W08
P6U_U: P6S_UW - K_U02; K_U06; P6S_UK - K_U09
P6U_K: P6S_KR - K_K04

Knowledge

W_1 [K_W04] the student knows and understands the importance of basic techniques, research methods and tools (mathematical, statistical, IT) used in monitoring to describe and interpret phenomena and processes occurring in the aquatic environment (program content: A.2, B.1- 6)
W_2 [K_W08] the student knows and understands the basic legal regulations and rules regarding the sustainable development of the marine environment and nature protection as well as management of the marine environment and its resources (program content: A.3)

Skills

U_1 [K_U02] the student is able independently or under the supervision of a tutor to plan tests and measurements, both in the field and laboratory, using appropriately selected measurement and analytical techniques in the field of oceanography, adequately to the research problem posed (program content: B.1-4)

	U_2 [K_U06] the student is able to analyze the results of research in analytical and synthetic way and on the basis of results draw correct conclusions (program content: B.3-5) U_3 [K_U09] the student is able to formulate and solve basic problems concerning the functioning of particular components of the marine environment, integrating knowledge from various fields and disciplines (program content: B.1-6)
	Social competence
	K_1 [K_K04] the student is ready to be cautious and critical in receiving information from the scientific literature, the Internet and other media referring to the natural sciences (program content: A1-3, B.1-6)

Contact

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