KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ SPOŁECZNY

Course title	ECTS code
Gen and genome engineering of marine organisms	13.8.1099

Name of unit administrating study

Faculty of Oceanography and Geography

Studies

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

Teaching staff

prof. UG, dr hab. Konrad Ocalewicz

Forms of classes, the realization and number of hours

Forms of classes

Laboratory classes, Lecture

The realization of activities

classroom instruction, online classes

Number of hours

Laboratory classes: 45 hours, Lecture: 30 hours

ECTS credits

6
Contact hours: 86
Number of ECTS credits: 3
- participation in lectures: 30 h
- participation in exercises: 45 h
- participation in the exam / pass: 5h
- participation in consultations: 6 h
Student's own work:
Number of ECTS credits: 3
Total number of hours: 75 h
- preparation for the exam / credit (studying literature): 30 h
- practical classes (preparation for classes, independent work, design and research tasks, etc.): 45 h

The academic cycle

2023/2024 winter semester

Type of course

obligatory

Language of instruction

english

Teaching methods

- conducting experiments
- group work
- multimedia-based lecture
- project-based method (research, implementation, practical project)

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

Final evaluation

- Graded credit
- Examination

Assessment methods

- ssignment work – conducting research and presenting results
- (mid-term / end-term) test
- assignment work – completing a specific practical assignment
- graded course credit based on individual grades obtained during the semester
- written exam (test)

The basic criteria for evaluation

Method of verifying required learning outcomes

zakładany efekt kształcenia	Wykonywanie doświadczeń	Wykład z prezentacją multimedialną
	Wiedza	
K_W04		exam
	Umiejętności	
K_U02	report, test	
K_U03	report, test	
K_U04	report, test	
	Kompetencje	
K_K05		exam

Required courses and introductory requirements

A. Formal requirements

B. Prerequisites

Aims of education

Objective 1: defining the concepts of gene and genomic engineering and acquainting the student with the techniques of DNA recombination, cloning of short DNA sequences, creating polyploid organisms and interspecies crosses.
Objective 2: introduction to the problems of gamete biology and reproduction of vertebrate and invertebrate marine organisms.
Objective 3: to familiarize the student with the possibilities of practical use of techniques in the field of recombination and duplication of DNA fragments as well as control of the reproduction of marine organisms in controlled conditions.
Objective 4: students acquire practical skills in assessing the quality of fish gametes, applying the techniques of polyploidization of cells and creating single-sex fish stocks.

Course contents

Bibliography of literature

The learning outcomes (for the field of study and specialization)

Knowledge

W_1 [K_W04] know and understand basic and advanced moelcular techniques, research methods and tools (mathematical, statistical, IT) used in the work of an oceanographer to describe and interpret phenomena and processes occurring in the aquatic environment, adequate to the studied specialisation

Skills

U_1 [K_U02] fluently and properly use the current scientific terminology in presenting and discussing problems in the field of gene and genome engineering (A1-A8, B1-B8)
U_2 [K_U03] independently plan and carry out tests and measurements, both in the field and in the laboratory, using appropriately selected measuring and analytical techniques in the field of gene and genome engineeringy, adequate to the specialisation studied and the research problem considered (B1-B8)
U_3 [K_U04] analytically and synthetically elaborate research and analyses results, and based on them, draw correct conclusions related to genes and genomes (B1-B8).

Social competence

K_1 [K_K05] comply with the principles of occupational health and safety, take care of the specialist equipment relted to molecular biology and genomics entrusted to them, s/he is aware of the risks and threats arising from their work (B1-B8)

Contact

konrad.ocalewicz@ug.edu.pl