

Subject card

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|--|---|---|---------------------------------|--|-------------------|-------------------|------------|
| Subject name and code | Statistics in marine biotechnology - laboratory, PG_00099408 | | | | | | |
| Field of study | Marine Biotechnology | | | | | | |
| Date of commencement of studies | October 2024 | Academic year of realisation of subject | | | 2024/2025 | | |
| Education level | postgraduate studies | Subject group | | | | | |
| Mode of study | full-time studies | Mode of delivery | | | at the university | | |
| Year of study | 1 | Language of instruction | | | English | | |
| Semester of study | 2 | ECTS credits | | | 2.0 | | |
| Learning profile | academic | Assessment form | | | | | |
| Conducting unit | Pracownia Biologii Planktonu -> Katedra Biologii Morza i Biotechnologii -> Faculty of Oceanography and Geography | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr hab. Agata Weydmann-Zwolicka | | | | |
| | Teachers | | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 20.0 | 0.0 | 0.0 | 0.0 | 20 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 20 | | 2.0 | | 15.0 | 37 |
| Subject objectives | <p>At the end of the course Students will be able to:</p> <ul style="list-style-type: none"> - Plan scientific research and design experiments - Collect data and prepare basic data bases - Apply proper statistical methods and computer tools for data analysis - Explain differences between different data transformations; correlation and regression; analysis of similarity and analysis of variance - Discuss possible errors | | | | | | |

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| Learning outcomes | Course outcome | Subject outcome | Method of verification |
| | [MBMU2-KW04] Knows and deeply understands advanced research methods used in marine biotechnology and related sciences | Student knows and understands advanced research methods used in marine biotechnology and marine biology | [SW4] test/exam - oral or written |
| | [MBMU2-KU02] Can collect and interpret empirical data; applies statistical methods and computer tools in data analysis; formulates conclusions based on empirical data | Student is able to collect and interpret empirical data; uses statistical methods and IT tools to analyze data; formulates conclusions based on empirical data | [SU4] test/exam - oral or written |
| | [MBMU2-KK01] Is ready to critically evaluate his knowledge and continuously improve, update and upgrade his skills in the field of marine biotechnology | Student is ready to critically evaluate their knowledge and constantly improve it, update it and improve his qualifications in the field of data analysis and statistical methods used in marine biotechnology | [SK4] test/exam - oral or written |
| Subject contents | <p>1. Introduction to statistics: basic terminology, steps of statistical research, measuring scales 2. Data collection, manipulation, preparation and transformation; Experimental design; Presentation of scientific data 3. Introduction to the methods of PRIMER 4. Resemblance: similarities, dissimilarities and distances; Correlation and regression 5. Clustering methods 6. Ordination and Multi-dimensional scaling 7. Analysis of Similarity (ANOSIM) and Analysis of Variance (ANOVA) 8. Analyzing environmental variables and linking assemblage to environment</p> | | |
| Prerequisites and co-requisites | Basic computer skills; Basics of statistics | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | Practical test | 51.0% | 100.0% |
| Recommended reading | Basic literature | <p>Clarke, K.R., Gorley, R.N. (2015) PRIMER v7: User Manual/Tutorial. PRIMER-E: Plymouth</p> <p>Clarke, K.R., Gorley, R.N., Somerfield, P.J., Warwick, R.M. (2014) Change in marine communities: an approach to statistical analysis and interpretation, 3rd edition. PRIMER-E: Plymouth</p> <p>Ruxton G.D., Colegrave N. Experimental design (2016) Experimental Design for the Life Sciences, 4th edition. Oxford University Press</p> | |
| | Supplementary literature | Set of up-to-date scientific papers selected by the teaching staff | |
| | eResources addresses | Adresy na platformie eNauczanie: | |
| | Example issues/ example questions/ tasks being completed | | |
| Work placement | Not applicable | | |

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