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| 1. | Field of study | Biophysics |
| 2. | Faculty | Faculty of Science and Technology |
| 3. | Academic year of entry | 2023/2024 (winter term), 2024/2025 (winter term) |
| 4. | Level of qualifications/degree | first-cycle studies |
| 5. | Degree profile | general academic |
| 6. | Mode of study | full-time |

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| 7. General information about the module | |
| Module name | Introduction to Experiment |
| Module code | W4-BF-S1-1-23-05 |
| Number of the ECTS credits | 3 |
| Language of instruction | Polish |
| Purpose and description of the content of education | The objective of the module is to familiarize students with the concept of the experiment as one of the scientific methods. As part of the course, students will learn the definitions and types of experiments, and become familiar with the basics of metrology and the measurement environment. In addition to the theoretical aspects, students will perform simple experiments and analyze the obtained data. |
| List of modules that must be completed before starting this module (if necessary) | not applicable |

| 8. Learning outcomes of the module | | | |
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| Code | Description | Learning outcomes of the programme | Level of competenc (scale 1-5) |
| E1 | The student knows the basic concepts of metrology, including systems of units, measuring tools, measurement methods, and basics of error calculus, and understands their interrelationship. | U04 U08 W07 | 1 1 1 |
| E2 | The student has an in-depth knowledge of the methods and instruments used to measure basic physical quantities and can perform a simple experiment. | U04 | 1 |
| E3 | The student knows and understands the regulations of laboratories, knows the supervising institutions, takes care of health and safety, and acts ethically. | U08 U09 U10 W09 W10 | 1 1 1 1 1 |
| E4 | The student has knowledge of the measurement environment, laboratory apparatus, and simple measuring instruments. | K01 K02 K04 | 1 1 1 |

| 9. Methods of conducting classes | | |
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| Code | Category | Name (description) |
| a05 | Lecture methods / expository methods | Explanation/clarification <i>explication involving the derivation of a predetermined theorem from other, already known ones, in the number of steps specified by the person teaching the course</i> |
| b09 | Problem-solving methods | Activating method – flipped classroom <i>anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course</i> |
| c07 | Demonstration methods | Screen presentation <i>a presentation of synthetic image content using computer graphics, e.g., a series of slides or other multimedia forms, usually accompanied by a commentary; typical components of a screen presentation include text organized into bulleted points, charts, images and animations, sometimes sound effects or music; a multimedia illustration of course content presented in the form of a projected image</i> |
| e01 | Practical methods | Laboratory exercise / experiment <i>[also conducted as fieldwork] a method of practical application of knowledge; implemented in three stages: the recognition of a problem induced by the task content, the formulation of the problem and the attempt to solve it accompanied by the assessment of the effects; the goal is to acquire skills, abilities and habits, and to consolidate the acquired knowledge so that it becomes operational; the laboratory method assumes greater independence of learners than carrying out an experiment</i> |
| f01 | Methods of self-learning | Self-education <i>a method which involves independent acquisition of knowledge, skills and social competences, extending their scope and quality; complementary to the learning process taking place in class; taking on the task of developing and adjusting qualifications on one's own; self-study</i> |
| f02 | Methods of self-learning | Individual work with a text <i>searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue</i> |

| 10. Forms of teaching | | | | | |
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| Code | Name | Number of hours | Assessment of the learning outcomes of the module | Learning outcomes of the module | Methods of conducting classes |
| FZ1 | workshop | 30 | course work | E1, E2, E3, E4 | a05, b09, c07, e01, f01, f02 |

| 11. The student's work, apart from participation in classes, includes in particular: | | | |
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| Code | Category | Name (description) | Is it part of the BUNA? |
| a02 | Preparation for classes | Literature reading / analysis of source materials <i>reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class</i> | No |
| a03 | Preparation for classes | Developing practical skills <i>activities involving the repetition, refinement and consolidation of practical skills, including those developed during previous classes or new skills necessary for the implementation of subsequent elements of the curriculum (as preparation for class participation)</i> | Yes |

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| a05 | Preparation for classes | Production/preparation of tools, materials or documentation necessary for class participation <i>developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes</i> | No |
| b01 | Consulting the curriculum and the organization of classes | Getting acquainted with the syllabus content <i>reading through the syllabus and getting acquainted with its content</i> | No |
| b02 | Consulting the curriculum and the organization of classes | Verification / adjustment / discussion of syllabus provisions <i>consulting the content of the syllabus, possibly in the presence of the year tutor or members of the class group, and, if necessary, reassessing the provisions concerning special conditions for class participation, e.g., space and time requirements, technical and other requirements, including conditions for participation in classes outside the walls of the university, classes organized in blocks, organized online, etc.</i> | Yes |
| c03 | Preparation for verification of learning outcomes | Implementation of an individual or group assignment necessary for course/phase/ examination completion <i>a set of activities aimed at performing an assigned task, to be executed out of class, as an obligatory phase/element of the verification of the learning outcomes assigned to the course</i> | Yes |

Information on the details of the module implementation in a given academic year can be found in the syllabus available in the USOS system: <https://usosweb.us.edu.pl>.