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| <b>1.</b>   | <b>Field of study</b>                       | <b>Aquamatics - Interdisciplinary Management of Water Environments</b>  |
| 2.  | Faculty                                     | Faculty of Natural Sciences   |
| 3.  | Academic year of entry                      | 2023/2024 (winter term), 2024/2025 (winter term)  |
| 4.  | Level of qualifications/degree              | first-cycle studies (in engineering)  |
| 5.  | Degree profile                              | general academic  |
| 6.  | Mode of study                               | full-time   |
| <b>7.</b>   | <b>General information about the module</b> |   |
| <b>Module name</b>  |   | <b>Engineering seminar 1</b>  |
| Module code   |   | W2-AQ-S1-047  |
| Number of the ECTS credits  |   | 2   |
| Language of instruction   |   | Polish  |
| Purpose and description of the content of education                               |   | Student nabywa umiejętności przygotowania pracy naukowej na poziomie pracy inżynierskiej. Uczy się planowania i realizacji kolejnych etapów przygotowania opracowania naukowego: pozyskiwania danych i literatury, efektywnej selekcji danych i literatury, prawidłowego wykorzystania informacji (w tym zasady działania Antyplagiatu), formułowania celu opracowania naukowego. W zależności od realizowanej przez studenta specjalności i tematyki pracy inżynierskiej: poznaje zasady doboru odpowiednich metod do rozwiązania konkretnego problemu lub sporządzania kompilacji na podstawie istniejącej literatury.  |
| List of modules that must be completed before starting this module (if necessary) |   | [W2-AQ-S1-021] GIS 1<br>[W2-AQ-S1-022] GIS 2<br>[W2-AQ-S1-015] Water status and resources monitoring<br>[W2-AQ-S1-018] Basics of chemical analytics<br>[W2-AQ-S1-023] Basics of data analysis<br>[W2-AQ-S1-012] Basics of chemistry<br>[W2-AQ-S1-014] Basics of ecology<br>[W2-AQ-S1-031] Basics of ecotoxicology<br>[W2-AQ-S1-011] Basics of engineering geology<br>[W2-AQ-S1-008] Basics of hydrobiology<br>[W2-AQ-S1-010] Basic of hydrogeology<br>[W2-AQ-S1-009] Basics of hydrology<br>[W2-AQ-S1-025] Basics of hydrotechnics<br>[W2-AQ-S1-034] Basics of ichtyology<br>[W2-AQ-S1-007] Basics of computer science and network security<br>[W2-AQ-S1-005] Basics of mathematics and statistics 1<br>[W2-AQ-S1-016] Basics of meteorology and climatology<br>[W2-AQ-S1-032] Basics of chemometric methods<br>[W2-AQ-S1-017] Basics of aquatic microbiology<br>[W2-AQ-S1-024] Basics of environmental protection<br>[W2-AQ-S1-020] Basics of water reclamation and renaturalisation<br>[W2-AQ-S1-019] Basic principles of documentation preparation<br>[W2-AQ-S1-026] Engineering project 1<br>[W2-AQ-S1-027] Engineering project 2 |

[W2-AQ-S1-030] Engineering proseminar  
 [W2-AQ-S1-033] Water in the city  
 [W2-AQ-S1-045] Basics of hydrogeology - field classes  
 [W2-AQ-S1-046] Basics of hydrology - field classes

**8. Learning outcomes of the module**

| Code           | Description  | Learning outcomes of the programme                  | Level of competenc (scale 1-5) |
|----------------|--|---|--------------------------------|
| W2-AQ-S1-047_1 | Potrafi sformułować problem badawczy i zaproponować sposób jego rozwiązania.     | AQ1_K01<br>AQ1_U01<br>AQ1_W01                       | 5<br>5<br>5                    |
| W2-AQ-S1-047_2 | Potrafi zaplanować badania i przeprowadzić je zgodnie z obowiązującymi zasadami. | AQ1_K01<br>AQ1_K02<br>AQ1_U01<br>AQ1_U02<br>AQ1_U03 | 4<br>4<br>4<br>4<br>4          |
| W2-AQ-S1-047_3 | Potrafi samodzielnie wykorzystać poznane narzędzia badawcze.                     | AQ1_K01<br>AQ1_K02<br>AQ1_U02<br>AQ1_W01<br>AQ1_W08 | 4<br>4<br>4<br>4<br>4          |

**9. Methods of conducting classes**

| Code | Category                | Name (description)  |
|------|-------------------------|---|
| b05  | Problem-solving methods | Activating method – seminar / proseminar<br><i>a seminar method; usually an oral presentation of a previously studied/diagnosed problem delivered on a forum; it aims at provoking a discussion concerning the results of research work; a type of conference, course or training session modelled on seminar classes</i> |

**10. Forms of teaching**

| Code             | Name    | Number of hours | Assessment of the learning outcomes of the module | Learning outcomes of the module                | Methods of conducting classes |
|------------------|---------|-----------------|---|--|-------------------------------|
| W2-AQS1-047_fs_1 | seminar | 30              | course work                                       | W2-AQ-S1-047_1, W2-AQ-S1-047_2, W2-AQ-S1-047_3 | b05                           |

**11. The student's work, apart from participation in classes, includes in particular:**

| Code | Category                | Name (description)   | Is it part of the BUNA? |
|------|-------------------------|--|-------------------------|
| a01  | Preparation for classes | Search for materials and review activities necessary for class participation | No                      |

|     |   |  |     |
|-----|---|--|-----|
|     |   | <i>reviewing literature, documentation, tools and materials as well as the specifics of the syllabus and the range of activities indicated in it as required for full participation in classes</i>   |     |
| a02 | Preparation for classes   | Literature reading / analysis of source materials<br><i>reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class</i>  | No  |
| a04 | Preparation for classes   | Consulting materials complementary to those indicated in the syllabus<br><i>agreeing on materials complementary to those indicated in the syllabus, supporting the implementation of tasks resulting from or necessary for class participation</i>   | No  |
| a05 | Preparation for classes   | Production/preparation of tools, materials or documentation necessary for class participation<br><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  |
| c02 | Preparation for verification of learning outcomes               | Studying the literature used in and the materials produced in class<br><i>exploring the studied content, inquiring, considering, assimilating, interpreting it, or organizing knowledge obtained from the literature, documentation, instructions, scenarios, etc., used in class as well as from the notes or other materials/artifacts made in class</i>   | No  |
| c03 | Preparation for verification of learning outcomes               | Implementation of an individual or group assignment necessary for course/phase/<br>examination completion<br><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>  | No  |
| d01 | Consulting the results of the verification of learning outcomes | Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes<br><i>reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes</i>   | Yes |
| d02 | Consulting the results of the verification of learning outcomes | Development of a corrective action plan as well as supplementary/corrective tasks<br><i>reviewing and selecting tasks and activities enabling the elimination of errors indicated by the academic teacher, their verification or correction resulting in completing the task with at least the minimum passing grade</i>   | No  |
| e01 | Activities complementary to the classes                         | Undertaking, on one's own initiative and individually, activities aimed at expanding the scope or depth of the teaching content, also beyond the walls of the University<br><i>a set of activities undertaken independently and on the student's own initiative, aimed at expanding the depth and scope of knowledge and skills, their revision and repetition, retention or verification, also activities carried outside the university, e.g., in a culture promoting or educational institution, a laboratory, in the open air, etc.; also self-education</i> | No  |

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>.