# A COURSE SYLLABUS – DOCTORAL SCHOOL

## REGARDING THE QUALIFICATION CYCLE FROM 2022 TO 2026

| GENERAL INFORMATION ABOUT COURSE | |
|---|---|
| Course title | **Doctoral seminar** |
| Name of the unit running the course | Doctoral School at University of Rzeszów |
| Type of course *(obligatory, optional)* | obligatory |
| Year and semester of studies | Year I - IV/Semester I-VII |
| Discipline | Biological sciences |
| Language of Course | polish |
| Name of Course coordinator | dr hab. Tomasz Durak, prof. UR |
| Name of Course lecturer | dr hab. Tomasz Durak, prof. UR |
| Prerequisites | Knowledge, skills, social competences at the level of studies of the second degree, majoring in biology. |

**BRIEF DESCRIPTION OF COURSE**
**(100-200 words)**

The aim of the doctoral seminar is to deepen and systematise the current knowledge related to the subject of the doctoral dissertation, training the skills of formulating and solving research problems and the ability to present scientific work. The issues addressed in the course and the projects carried out will also serve to prepare the doctoral student for the execution of the doctoral thesis and the presentation of the research results obtained. In addition, the doctoral seminar will aim to train the doctoral student in the ability to search for important, from the point of view of content and scientific value, publications in the field of the implemented research topic.

**COURSE LEARNING OUTCOMES AND METHODS OF EVALUATING LEARNING OUTCOMES**

| Learning outcome | The description of the learning outcome defined for the course | Relation to the degree programme outcomes (symbol) | Learning Format (Lectures, classes,...) | Method of assessment of learning outcomes (e.g. test, oral exam, written exam, project,...) |
|---|---|---|---|---|
| **Knowledge (no.)** | **(Knows and understands)** | | | |
| 1 | the development and current state of knowledge of physiological and biochemical responses of plants to changes in environmental conditions and the consequences of such changes for the functioning of plant communities and the ecosystem; | **P8S_WG1** **P8S_WG2** | seminar | presentation /discussion |
| 2 | the professional terminology used in the field of biological sciences and related fields in the native and foreign language; | **P8S_WG3** | seminar | presentation /discussion |
| **Skills (no.)** | **(Able to)** | | | |
| 1 | use the knowledge possessed to identify and solve research problems, to formulate research questions and hypotheses, apply/propose appropriate research methods and correctly draw conclusions on the basis of the obtained results; | **P8S_UW1** **P8S_UW2** | seminar | presentation /discussion /project |
| 2 | use the knowledge possessed to critically analyse and evaluate the results of scientific research, expert works and other works of creative | **P8S_UW3** | seminar | presentation /discussion |

| | | | | |
|---|---|---|---|---|
| | character and their contribution to the development of knowledge; | | | |
| 3 | actively participate in various national and international events in a scientific and professional environment, communicating in a foreign language at the B2 level of the European Language Education System; | **P8S_UK6** | seminar | presentation /discussion |
| **Social competence (no.)** | **(Ready to)** | | | |
| **1** | critically evaluate the achievements within the presented discipline of biological sciences and research issues; | **P8S-KK/1** | seminar | presentation /discussion |
| **2** | recognise the importance of knowledge in solving cognitive and practical problems. | **P8S-KK/3** | seminar | presentation /discussion |

**LEARNING FORMAT – NUMBER OF HOURS**

| Semester | (no.) | Lectures | Seminars | Lab classes | others | ECTS |
|---|---|---|---|---|---|---|
| I - VII | - | - | - | - | 7 x 15 hrs. – 105 hrs. | 14 |

**METHODS OF INSTRUCTION**

Multimedia presentation, discussion, project preparation

**COURSE CONTENT**

The programme contents are related to the research problem of a doctoral student and are realised in the period from semester I to VII:

1. Review of literature and determination of the current state of knowledge in the field of plant response to environmental changes;
2. Review of research methods;
3. Discussion of the concept of a doctoral dissertation;
4. Preparation for the realisation of the research - selection of literature and research methods;
5. Realisation of the research;
6. Development of research results and their presentation;
7. Discussion of research results and their summary.

**COURSE ASSESSMENT CRITERIA**

Credit with marks after each semester, based on the level of prepared presentations and projects and substantive activity in discussion of the issues presented.
Possible semester grades are: 2.0, 3.0, 3.5, 4.0, 4.5, 5.0.

Percentage requirements for the grading scale:
In order to obtain a pass grade, a conversion factor is applied for the corresponding percentage of points obtained:
- up to 50% - insufficient, (the doctoral student does not make progress in scientific research, does not expand knowledge, does not study the primary literature, does not participate in substantive discussion, does not meet scientific obligations);
- 51% - 60% - sufficient, (the doctoral student makes negligible progress in scientific research, expands knowledge, studies the primary literature, the discussion conducted is limited to a narrow range of substantive knowledge, meets basic scientific obligations);
- 61% - 70% - satisfactory plus, (the student makes progress in scientific research, broadens knowledge, studies basic literature, substantively participates in the discussion, fulfils all the scientific duties);

- 71% - 80% - good, (the student makes significant progress in scientific research, broadens knowledge, studies basic and supplementary literature, substantively participates in the discussion, fulfils all the scientific duties);
- 81% - 90% - good plus, (doctoral student makes significant progress in scientific research, systematically extends knowledge, studies basic and complementary literature, substantively participates in discussion, meets all scientific obligations);
- 91% - 100% - very good (doctoral student makes significant progress in scientific research, systematically extends knowledge, studies basic, complementary and beyond obligatory literature, substantively participates in discussion, meets all scientific obligations).

**TOTAL PhD STUDENT WORKLOAD REQUIRED TO ACHIEVE THE INTENDED LEARNING OUTCOMES**
**– NUMBER OF HOURS AND ECTS CREDITS**

| Activity | Number of hours |
|---|---|
| Scheduled course contact hours | **105 hrs. – 7 x 15 hrs.** |
| Other contact hours involving the teacher (consultation hours, examinations) | **75** |
| Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.) | **240 hrs.** |
| **Total number of hours** | **420 hrs.** |
| **Total number of ECTS credits** | **14** |

**INSTRUCTIONAL MATERIALS**

| | |
|---|---|
| Compulsory literature: | SCIENTIFIC ARTICLES IN POLISH AND FOREIGN LANGUAGES IN THE FIELD OF PLANT PHYSIOLOGY AND ECOLOGY.<br>PESSARAKLI M. ED. 1999. HANDBOOK OF PLANT AND CROP STRESS. 2ND EDN, REVISED AND EXPANDED. NEW YORK.<br>REIGOSA, MJ. 2001. HANDBOOK OF PLANT ECOPHYSIOLOGY TECHNIQUES. KLUWER ACADEMIC PUBLISHERS, THE NETHERLANDS. |
| Complementary literature: | Weiner J., 2028. Technika pisania i prezentowania przyrodniczych prac naukowych. Wyd. Naukowe PWN, Warszawa.<br>Włodzimierz Meissner W., 2014. Metody statystyczne w biologii. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk. |

*(1 ECTS CREDIT CORRESPONDS TO 25 - 30 HOURS OF TOTAL WORKLOAD OF THE DOCTORAL STUDENT NEEDED TO ACHIEVE THE EXPECTED OUTCOMES

…… ……
DATE AND SIGNATURE OF THE COURSE TUTOR

…… …… ……
APPROVAL OF THE HEAD OF THE UNIT OR AUTHORISED PERSON