**SYLLABUS**

**regarding the qualification cycle FROM 2023TO 2024**

1. Basic Course/Module Information

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| --- | --- |
| Course/Module title | *Plant Biology* |
| Course/Module code \* |  |
| Faculty (name of the unit offering the field of study) | *College of Natural Sciences* |
| Name of the unit running the course | *Institute of Agricultural Sciences, Land Management and Environmental Protection* |
| Field of study | *Landscape architecture* |
| Qualification level | *First degree* |
| Profile | *General academic* |
| Study mode | *Stationary* |
| Year and semester of studies | *I/1* |
| Course type | *Basic subject* |
| Language of instruction | *English* |
| Coordinator | *dr inż. Anita Poradowska* |
| Course instructor | *dr inż. Anita Poradowska* |

\* - as agreed at the faculty

1.1.Learning format – number of hours and ECTS credits

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Semester  (n0.) | Lectures | Classes | Colloquia | Lab classes | Seminars | Practical classes | Internships | others | **ECTS credits** |
| 1 |  |  |  | 30 |  |  |  |  | 5 |

1.2. Course delivery methods

- conducted in a traditional way

- involving distance education methods and techniques

1.3. Course/Module assessment (exam, pass with a grade, pass without a grade)

2. Prerequisites

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| knowledge of the basics of botany and plant physiology in the field of high school |

3. Objectives, Learning Outcomes, Course Content, and Instructional Methods

3.1. Course/Module objectives

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| --- | --- |
| O1 | *familiarizing students with the basics of cytology, histology, morphology and anatomy of plants in connection with the function of plant organs in various environments* |
| O2 | *familiarizing students with the basic physiological processes of the plant organism* |
| O3 | *familiarizing students with the basics of plant systematics and phytosociology* |
| O4 | *presentation of the structure of the microscope, the principles of its use and preparation of preparations* |

3.2. Course/Module Learning Outcomes (to be completed by the coordinator)

|  |  |  |
| --- | --- | --- |
| Learning Outcome | The description of the learning outcome  defined for the course/module | Relation to the degree programme outcomes |
| LO\_01 | *The graduate knows the functions and basics of the morphological and anatomical structure of cells, tissues, vegetative and generative organs of plants* | K\_W03 |
| LO\_02 | *The graduate recognizes and presents the living conditions of plants in various types of environments* | K\_W04 |
| LO\_03 | *The graduate knows and understands the basic physiological processes in the plant and explains the relationship between the morphological and anatomical structure of the plant organ with its physiological function* | K\_W04 |
| LO\_04 | *The graduate recognizes the connections between plants and the surrounding environment* | K\_U07 |
| LO\_05 | *The graduate is able to describe the relationship between the structure of plant organs and their functions* | K\_U07 |
| LO\_06 | *The graduate efficiently uses the microscope, prepares the preparations independently and correctly interprets the observed objects* | K\_U07, K\_U10 |

**3.3. Course content (to be completed by the coordinator)**

1. Lectures

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| Content outline |
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1. Classes, tutorials/seminars, colloquia, laboratories, practical classes

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| Content outline |
| *Structure and functions of plant cells. Plant tissues. Primary and secondary tissues; creative and solid tissues (microscopic exercises)* |
| *Organs: Root. Morphological and anatomical structure: primary and secondary. Root types and their functions. Modifications of roots as adaptation to the environment and performing new functions (microscopic exercises and observation of live and herbarium materials)* |
| *Shoot and stem. Morphological structure of the stem, primary and secondary anatomy of the stem. Functions of the stem. Modifications of the stem as an adaptation to the environment and performing new functions (microscopic exercises and observation of live and herbarium materials)* |
| *Plant water management - root pressure, gutation, conduction of dyes from the aqueous solution to leaves and flowers (experiments)* |
| *Leaf. Morphological and anatomical structure. Leaf functions. Modifications of leaves as an adaptation to the environment and performing new functions (microscopic exercises and observation of live and herbarium materials)* |
| *Stomata as a place of plant transpiration and respiration - stomata of leaves of monocotyledonous and dicotyledonous plants from various habitats, structure and distribution (microscopic exercises)* |
| *Flower. Structure of a flower and the method of pollination. Inflorescences Seed, fruit, diaspora. The structure of seeds and fruits. The structure of diasporas and the way they spread (observation of live and herbarium materials)* |

3.4. Methods of Instruction

e.g.

*Laboratory classes: designing and conducting experiments, group work, didactic games*

4. Assessment techniques and criteria

4.1 Methods of evaluating learning outcomes

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| --- | --- | --- |
| Learning outcome | Methods of assessment of learning outcomes (e.g. test, oral exam, written exam, project, report, observation during classes) | Learning format (lectures, classes,…) |
| LO-01 | Test, report | C |
| LO-o2 | Test, report | C |
| LO-o3 | Test, report | C |
| LO-o4 | observation during classes | C |
| LO-o5 | observation during classes | C |
| LO-o6 | observation during classes | C |
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4.2 Course assessment criteria

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| Classes: passing with a grade (based on partial grades from tests and report)  The condition for completing the course is achieving the assumed learning outcomes. Passing the laboratory exercises allows you to take the exam.  The number of points obtained in partial tests (> 55% of the maximum number of points) decides about the positive evaluation of the laboratory exercises.  The percentage of points obtained in the written exam decides about the passing grade: dst 55-70%, plus dst 71-75%, db 76-85%, plus db 86-90%, very good 90-100%) |

5. Total student workload needed to achieve the intended learning outcomes

– number of hours and ECTS credits

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| --- | --- |
| Activity | Number of hours |
| Scheduled course contact hours | 30 |
| Other contact hours involving the teacher (consultation hours, examinations) | 20 |
| Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.) | 75 |
| Total number of hours | 125 |
| Total number of ECTS credits | 5 |

\* One ECTS point corresponds to 25-30 hours of total student workload

6. Internships related to the course/module

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| --- | --- |
| Number of hours | *-* |
| Internship regulations and procedures | *-* |

7. Instructional materials

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| Literatura podstawowa:  *Szweykowska A., Szweykowski J.: Botanika. Tom I. PWN, Warszawa. 2006.*  *Piskornik Z.: Fizjologia roślin dla wydziałów ogrodniczych. Tom I i II. PWN, Warszawa. 1997.* *Campbell Biology 12th edition* |
| Complementary literature:  *Pojnar E. (red.): Botanika. Teoria i ćwiczenia. Cz. I., AR w Krakowie, 1983.*  *Podbielkowski Z., Podbielkowska M.: Przystosowania roślin do środowiska. WSiP, Warszawa. 1992.* |

Approved by the Head of the Department or an authorised person