

# Plant Biology - opis przedmiotu

| Informacje ogólne   |                                            |
|---------------------|--------------------------------------------|
| Nazwa przedmiotu    | Plant Biology                              |
| Kod przedmiotu      | 13.1-WB-EPP-B.Roś-S19                      |
| Wydział             | <a href="#">Wydział Nauk Biologicznych</a> |
| Kierunek            | Environmental Protection                   |
| Profil              | ogólnoakademicki                           |
| Rodzaj studiów      | pierwszego stopnia z tyt. licencjata       |
| Semestr rozpoczęcia | semestr zimowy 2022/2023                   |

| Informacje o przedmiocie        |                                                                                                                   |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Semestr                         | 1                                                                                                                 |
| Liczba punktów ECTS do zdobycia | 6                                                                                                                 |
| Typ przedmiotu                  | obowiązkowy                                                                                                       |
| Język nauczania                 | angielski                                                                                                         |
| Sylabus opracował               | <ul style="list-style-type: none"><li>prof. dr hab. Beata Gabryś</li><li>prof. dr hab. Grzegorz Iszkuło</li></ul> |

| Formy zajęć  |                                         |                                        |                                            |                                           |                     |
|--------------|-----------------------------------------|----------------------------------------|--------------------------------------------|-------------------------------------------|---------------------|
| Forma zajęć  | Liczba godzin w semestrze (stacjonarne) | Liczba godzin w tygodniu (stacjonarne) | Liczba godzin w semestrze (niestacjonarne) | Liczba godzin w tygodniu (niestacjonarne) | Forma zaliczenia    |
| Wykład       | 30                                      | 2                                      | -                                          | -                                         | Zaliczenie na ocenę |
| Laboratorium | 45                                      | 3                                      | -                                          | -                                         | Zaliczenie na ocenę |

## Cel przedmiotu

The aim of the course is to provide knowledge on plants vegetative and reproductive anatomy, growth and development, the diversity of life forms and the principles of biological classification. The student should learn to determine and characterize basic taxa of Protista, Fungi and Plants and get acquainted with the diversity of Polish flora. Moreover, the student should learn the basics of plant physiology and classification of life and ecological forms of plants. During laboratory training, student should learn the basic rules of safety in a biological laboratory, the basic microscopic techniques and preparation of microscopic slides. Student should analyze the permanent and self-prepared slides and make biological drawings.

## Wymagania wstępne

Basic knowledge on biology as described in a high school minimum program.

## Zakres tematyczny

LECTURES: The properties and environment of life. Vegetative and reproductive anatomy. Plant growth and development. Floral development and reproductive physiology. Plants, water and mineral nutrition. Reproductive ecology. Interactions between plants and other organisms. Systematic review of plant diversity: evolution of structure, systematics and role in environment. LABORATORIES: The structure of optical microscope. Basics of microscopic techniques. Plant cell. Fundamentals of cytology. Chemical structure of organisms. Life cycle. Plant tissues: meristems and mature tissues. Morphology and anatomy of root, stem, and leaf. The structure of flowers and the types of inflorescences. Types and structure of seeds and fruits. Plant identification.

## Metody kształcenia

Lectures: Informative multimedial presentations; practicals - laboratory training with the use of biological microscopes, microscopic slides and macroscopic biological material

## Efekty uczenia się i metody weryfikacji osiągnięcia efektów uczenia się

| Opis efektu                                                                                                                                                                                                                                                                                | Symbole efektów                                                                                         | Metody weryfikacji                                                                                         | Forma zajęć                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| The student describes the basics of microscopic and preparation techniques and knows how to use the basic equipment in a biological laboratory                                                                                                                                             | <ul style="list-style-type: none"><li><a href="#">K1A_W10</a></li></ul>                                 | <ul style="list-style-type: none"><li>bieżąca kontrola na zajęciach</li></ul>                              | <ul style="list-style-type: none"><li>Laboratorium</li></ul>                |
| The student has basic knowledge on the basics of general and systematic botany in the area of plant cytology and histology, plant anatomy, morphology and physiology, life cycles of seedless and seed plants, and plant systematics and phylogeny.                                        | <ul style="list-style-type: none"><li><a href="#">K1A_W09</a></li></ul>                                 | <ul style="list-style-type: none"><li>egzamin - ustny, opisowy, testowy i inne</li><li>kolokwium</li></ul> | <ul style="list-style-type: none"><li>Wykład</li><li>Laboratorium</li></ul> |
| The student uses literature as well as electronic sources, can interpret and integrate the information obtained, use the self-learning method, and see the need to learn and improve their cognitive skills; is aware of the dynamic changes in knowledge, cares about keeping it updated. | <ul style="list-style-type: none"><li><a href="#">K1A_U08</a></li><li><a href="#">K1A_U44</a></li></ul> | <ul style="list-style-type: none"><li>egzamin - ustny, opisowy, testowy i inne</li><li>kolokwium</li></ul> | <ul style="list-style-type: none"><li>Wykład</li><li>Laboratorium</li></ul> |

| Opis efektu                                                                                                                                                                                                                                                                                                                          | Symbole efektów                                                                                                                                   | Metody weryfikacji                                                                | Forma zajęć                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| The student is able to work in a group, organize activities within a specified range, pays attention to the teacher and follows the instructions of the teacher                                                                                                                                                                      | <ul style="list-style-type: none"> <li>• <a href="#">K1A_K01</a></li> <li>• <a href="#">K1A_K02</a></li> </ul>                                    | <ul style="list-style-type: none"> <li>• aktywność w trakcie zajęć</li> </ul>     | <ul style="list-style-type: none"> <li>• Wykład</li> <li>• Laboratorium</li> </ul> |
| The student applies the rules of safety in the biological laboratory, plans and conducts an experiment, uses the learned study techniques (preparation of biological material, analysis using a microscope), interprets and analyzes the results. Uses the acquired knowledge in professional environment and in other environments. | <ul style="list-style-type: none"> <li>• <a href="#">K1A_U02</a></li> <li>• <a href="#">K1A_U03</a></li> <li>• <a href="#">K1A_U48</a></li> </ul> | <ul style="list-style-type: none"> <li>• bieżąca kontrola na zajęciach</li> </ul> | <ul style="list-style-type: none"> <li>• Wykład</li> <li>• Laboratorium</li> </ul> |

## Warunki zaliczenia

LECTURE: The student is allowed to take the final written exam after having completed and earned credits for practical courses. The exam lasts 60 minutes contains 40 closed questions. PRACTICALS: The credit is given basing on the positive evaluation of all laboratory training sessions, positive results of all written tests (each test consists of open and closed questions; the positive result is based on a positive evaluation of a minimum 60% of the questions), positive evaluation of laboratory diary, and the test of practical skills (recognition of the biological material studied during the semester). The final mark is an arithmetic mean of all partial marks.

## Literatura podstawowa

- Lack, A., Evans, D.E., 2001. Plant biology. BIOS Scientific Publishers, Oxford.
- Bidlack, J., Jansky, S., Stern, K.R., 2013. Stern's Introductory Plant Biology, ed. McGraw-Hill Education, New York, NY.

## Literatura uzupełniająca

Lambers, H., Chapin, F.S., Pons, T.L., 2008. Plant Physiological Ecology. Springer New York, New York, NY. doi:10.1007/978-0-387-78341-3

## Uwagi

Zmodyfikowane przez prof. dr hab. Beata Gabryś (ostatnia modyfikacja: 06-05-2022 09:25)

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