



Module syllabus: The diversity of vascular plants and bryophytes

1. Overall information

Module coordinator	dr hab. Adam Rostański
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ECTS	4
Method for the verification of learning outcomes	<p>The final grade for the module is weighted on the average of the following student activities:</p> <ul style="list-style-type: none">- Active participation in laboratory classes (0.4) (continuous evaluation of practical skills [0.2], tests [0.8]),- Final exam (0.3). <p>A positive evaluation of the laboratory allows a student to take the final exam. To be awarded a final grade, the student must have passed each activity of the module.</p> <p>Grades: below 51% – fail (F); 52-60% – with minimum academic criteria (E); 61-65% – satisfactory (D); 66-75% – good (C); 76-85% – very good (B), ≥ 85% – excellent (A)</p>

2. Description of student activity and work

Lecture	
Responsible instructor	dr hab. Adam Rostański
Content	<p>The lectures will review the diversity of the divisions (phyla) and lower taxa of mosses, ferns and seed plants and will include the issues of their development cycles, phylogeny and evolutionary trends.</p> <p>Lecture content:</p> <ol style="list-style-type: none">1. "Expansion" of plants on the land, the role of psilophytes and the telome theory2. Bryophytes and their contemporary diversity3. Fossil and contemporary pteridophytes4. Primary seed plants, gymnosperms and gnetophytes5. Angiosperms – contemporary classification and review
Number of didactic hours (contact hours)	10
Literature	<ol style="list-style-type: none">1. Margulis L., Schwarz K.V., 1997. Five kingdoms. Third edition. W.H. Freeman & Company, New York.2. Bresinsky A., Körner Ch., Kadereit J.W., Neuhaus G., Sonnewald U. 2013 Strasburger's Plant Sciences. Springer Verlag, Berlin-Heidelberg.3. Takhtajan A., 2009. Flowering Plants. Second edition. Springer Science & Business Media. New York.





Laboratory	
Responsible instructors	Staff of the Department of Botany and Nature Protection
Laboratory content	<ol style="list-style-type: none">1. Introduction to laboratory classes. Characteristics of cryptogamous plants: bryophytes (Bryophyta) and clubmosses (Lycopodiophyta).2. Characteristics of cryptogamous plants: horsetails (Equisetophyta) and ferns (Polypodiophyta).3. Introduction to seed plants. Characteristics of the gymnosperms plants (Pinophyta).4. Introduction to angiosperms (Magnoliophyta): morphology of flowers and fruits and types of inflorescences. Characteristics of selected representatives of angiosperms (Dicotyledons): subclass – Magnoliidae, subclass – Ranunculidae.5. Characteristics of selected representatives of subclasses of angiosperms (Dicotyledons): subclasses Caryophyllidae and Hamamelidae.6. Characteristics of selected representatives of angiosperms (Dicotyledons): subclass – Dilleniidae.7. Characteristics of selected representatives of angiosperms (Dicotyledons): subclass – Rosidae.8. Characteristics of selected representatives of angiosperms (Dicotyledons): subclass – Asteridae.9. Characteristics of selected representatives of angiosperms (Dicotyledons): subclass – Lamiidae.10. Characteristics of selected representative subclasses of angiosperms (Monocots): subclass – Liliidae.11. Characteristics of selected representative subclasses of angiosperms (Monocots): subclass – Commelinidae.12. Characteristics of selected representative subclasses of angiosperms (Monocots): subclasses Alismatidae and Aridae).
Methodology of laboratory classes	The Laboratory will include 12 lab units (3 hours. 10 min each), which will include a practical overview of the diversity of the morphology and biology of representatives of mosses, ferns and seed plants along with an explanation of the issues their development cycles
Number of didactic hours (contact hours)	50
Literature	<ol style="list-style-type: none">1. Bresinsky A., Körner Ch., Kadereit J.W., Neuhaus G., Sonnewald U. 2013 Strasburger's Plant Sciences. Springer Verlag, Berlin-Heidelberg.2. Takhtajan A., 2009. Flowering Plants. Second edition. Springer Science & Business Media. New York.

3. Forms of verification





Continuous evaluation of knowledge, activity and practical skills

Grades	<p>After each lab, at the end of the observation, student presents the prepared "work card" (report). The correctness of the filled "work card" (report) will be assessed. There are two possible assessment: credit (good) or no credit (bad). Students should submit at the end of the subject set 9 "work cards"-set. In exceptional (justify) situations credit of the module it is possible on the basis of 7 included "work cards".</p> <p>Grades are awarded on a scale: A -F, where A is the best and F is a fail.</p> <p><u>An excellent performance (A)</u> – the student actively participates in laboratory work, demonstrates an excellent understanding the knowledge of laboratory and lecture program, ability to connect theoretical knowledge with practical, (e.g. the ability to use the keys to the determination of plants)</p> <p><u>A good performance (C)</u> – the student demonstrates a good abilities of identification and knowledge, correctly understanding the knowledge of laboratory and lecture program, ability to connect theoretical knowledge with practical ability.</p> <p><u>A satisfactory performance (E)</u> – the student demonstrates a satisfactory judgment and knowledge of laboratory and lecture program.</p> <p><u>A performance that does not meet the minimum academic criteria (F)</u> – the student does not present the satisfactory level neither of theoretical knowledge nor of the practical ability.</p>
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Final test

Evaluation	<p>The evaluation comprises judgment and knowledge related to the laboratory programme. The final grade is the arithmetic mean of all of the tests and is part of the final evaluation of the laboratory. A student may include an outstanding test within the prescribed period by the instructor.</p> <p>Grades for the tests awarded on a scale of A-F, where A is the best and F is a fail.</p> <p>An excellent test (A) – without any essential errors</p> <p>Fail (F) – more than 50% incorrect answers.</p>
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Final exam

Grades	<p>The final exam covers the content of the lectures and laboratory classes. Grades are awarded on a scale of A-F, where A is the highest and F is a fail.</p> <p>Excellent (A) – the student presents fluent knowledge in the field of the biodiversity of vascular plants and bryophytes</p> <p>Fail (F) – the student does not present a satisfactory level of knowledge in the field of the biodiversity of vascular plants and bryophytes.</p> <p>The final evaluation is determined according to the following scale based on the maximum number of points:</p> <p>91-100% points – A</p> <p>81-90% of points – B</p> <p>71-80% points – C</p> <p>61-70% points – D</p> <p>51-60% points – E</p>
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0-50% points - F.

