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Curriculum for the  
**Master's Degree Programme in Botany**  
at the Faculty of Biology of the University of Innsbruck

**§ 1 Qualification profile**

- (1) The Master's Degree Programme in Botany belongs to the group of studies in the Natural Sciences.
- (2) The objective of the Master's Degree Programme in Botany at the University of Innsbruck is to provide a profound education in the field of Botany with focus on research. Major focus lies on acquiring fundamental knowledge of the subject and scientific working methods, as well as autonomous scientific research, vocational specialisation and the promotion of teamwork abilities. A good balance between fundamental science and practice orientated studies promotes creative thinking and the ability to solve problems. The Master's Degree Programme also prepares students for doctoral studies.
- (3) Graduates of the programme have career prospects in the following fields:
  - Research and teaching at universities, universities of applied science and other educational institutions.
  - Scientific and management activity in private and public companies and institutions (e.g. in the fields of biology and environmental sciences, agriculture and forestry, cultivation of plants, environment protection and conservation, pharmacy, medicine, public administration), in museums of Natural Science, in botanical gardens, and in nature reserves and conservation areas.
  - Activities as an expert or consultant for private and public companies, e.g. in the fields of environmental protection and conservation, landscape architecture and conservation, climate and vegetation change, documentation of biodiversity or environmental and biomonitoring.

**§ 2 Duration and scope**

A total of 120 ECTS credits are awarded for the Master's Degree Programme in Botany. This equals duration of 2 years (4 semesters). One ECTS credit equals a workload of 25 hours.

**§ 3 Admission**

- (1) Completion of a relevant University Bachelor Programme or a relevant Bachelor Programme at a university of applied science, or completion of other equivalent studies at an accredited Austrian or non-Austrian post-secondary educational institution is required for admission to the Master's Degree Programme.
- (2) Completion of the Bachelor Programme in Biology at the University of Innsbruck shall be deemed relevant for the purposes of para. 1 in any case.

- (3) If equivalency is given in principle, and only a few elements are missing for full equivalency, the rector's office is entitled to combine the determination of equivalency with the obligation to pass certain examinations in the course of the Master's Programme.

#### § 4 Types of courses and maximum number of students per course

- (1) With the exception of lectures (VO), all courses are courses with continuous performance assessment. Decisive factors for the maximum number of students per course and the necessary support and mentoring to students are safety aspects, available space, and necessary equipment.
- (2) Courses are divided into the following types
1. **Lecture (VO):** In this type of course, significant content and schools of thought of a special area are presented and explained by a lecturer. Maximum number of students per course: 300
  2. **Practical course (UE):** Practical courses enable participants to study and apply scientific knowledge and working methods in practice. Maximum number of students per course: 10
  3. **Lecture with integrated practical parts (VU):** Integrated course where lecture parts are combined with practical parts. Maximum number of participants: 8 – 15
  4. **Seminar (SE):** In guided self-study programmes, including lecture presentations, written contributions and/or scientific discussions, students reflect on subject matter and methods of a special area. Maximum number of students per course: 10 – 30
  5. **Project study (PJ):** In these courses, selected scientific methods are applied in special projects. Maximum number of students per course: 10
  6. **Excursion with integrated practical parts (EU):** Integrated course where a field trip is combined with practical parts. Maximum number of students per course: 10

#### § 5 Procedure for the allotment of places in courses with a limited number of participants

The following criteria shall be applied for the allotment of places in courses with a limited number of participants:

1. Presence at the preliminary meeting (personal or represented by a proxy)
2. Regular students of the Master's Programme in Botany are to be given priority
3. Date of fulfilment of the necessary admission requirement(s); students who fulfilled the admission requirement(s) at an earlier time are to be given priority
4. Number of semesters the student has been enrolled for the Master's Programme in Botany; students who have been enrolled for a longer time are to be given priority
5. By lot

#### § 6 Mandatory and elective modules

The following modules are offered in the framework of the Master's Degree Programme in Botany

- (1) Mandatory modules

Mandatory module 1: Instruction to Scientific Work	15.0 ECTS credits
Mandatory module 3: Master's Thesis Defence (Defensio)	2.5 ECTS credits

- (2) Elective modules in the area of "Plant Diversity and Systematics"

Elective module 1: Plant Diversity and Systematics – Phanerogams and Algae 7.5 ECTS credits

	Elective module 2: Plant Diversity and Systematics – Woody Plants, Lichens, Mosses and Pteridophytes	7.5 ECTS credits
	Elective module 3: Plant Diversity and Systematics	7.5 ECTS credits
	Elective module 4A: Special Hydrobotany	7.5 ECTS credits
	Elective module 4B: Applied Hydrobotany	7.5 ECTS credits
(3)	Elective modules in the area of “Plant Ecology”	
	Elective module 5: Plant Ecology I	7.5 ECTS credits
	Elective module 6: Plant Ecology III	7.5 ECTS credits
(4)	Elective modules in the area of “Palynology and Palaeoecology”	
	Elective module 7: Palynology and Archaeobotany I	7.5 ECTS credits
	Elective module 8: Palynology and Archaeobotany II	7.5 ECTS credits
	Elective module 9: Dendroecology and -climatology	7.5 ECTS credits
(5)	Elective modules in the area of “Plant Physiology”	
	Elective module 10: Plant Physiology – Cell Physiology of Plants	7.5 ECTS credits
	Elective module 11: Plant Physiology – Biotechnology of Plants	7.5 ECTS credits
(6)	Elective modules in the area of “Physiological Plant Ecology”	
	Elective module 12: Physiological Plant Ecology	7.5 ECTS credits
	Elective module 13: Physiological Ecology of Alpine Plants	7.5 ECTS credits
	Elective module 14: Stress Physiology of Plants	7.5 ECTS credits
(7)	Elective modules in the area of “Developmental and Cellular Biology of Plants”	
	Elective module 15: Developmental and Cellular Biology of Plants	7.5 ECTS credits
	Elective module 16: Cellular and Molecular Biology of Plants	7.5 ECTS credits
	Elective module 17: Special Developmental Biology of Plants	7.5 ECTS credits
(8)	Elective modules in the area of “Other Disciplines”	
	Elective module 18: Theory of Science and Gender Research	7.5 ECTS credits
	Elective modules 19 and 20: Modules from other Master's Programmes of the Faculty of Biology	7.5 ECTS credits each
(9)	Elective module in the area of “Plant Biogeography”	
	Elective module 21: Classical and Molecular Plant Biogeography	7.5 ECTS credits
	<b>Required total</b>	<b>92.5 ECTS credits</b>

- (10) Students are required to complete both mandatory modules 1 and 2 as well as one module each from para. 2 to 7. The remaining four modules can be freely selected from para. 2 to 9. Of the alternating elective modules 4A/B, only one elective module can be selected.

**§ 7 Courses of the mandatory and elective modules, including ECTS credits.**

(1) The following mandatory modules must be completed.

<b>1.</b>	<b>Mandatory module: Instruction to Scientific Work</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>PJ Instruction to Scientific Work</b> Students are introduced to scientific methods for the design, realisation, interpretation and presentation of the Master's Thesis.	10	15
	<b>Total</b>	<b>10</b>	<b>15</b>
	<b>Learning objectives:</b> Ability to design, elaborate and assess complex trials in the frame of the Master's Thesis		
	<b>Admission requirements:</b> none		

<b>2.</b>	<b>Mandatory module: Master's Thesis Defence (Defensio)</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	Oral defence of the Master's Thesis before an examination board		2.5
	<b>Total</b>		<b>2.5</b>
	<b>Learning objectives:</b> Reflection on the Master's Thesis in the context of the Master's Studies in Botany		
	<b>Admission requirements: positive completion of all other mandatory and elective modules and positive evaluation of the Master's Thesis</b>		

(2) In compliance with §6 para. 10, modules equalling a total of 75 ECTS credits must be selected from the following elective modules.

<b>1.</b>	<b>Elective module: Plant Diversity and Systematics – Phanerogams and Algae</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VU Diversity of Selected Phanerogams</b> Extended systematic morphological studies on selected groups of phanerogams: complex groups will be picked out, analysed and examined. Definition of species and tribes will be discussed.	3	4.5
<b>b.</b>	<b>VU Evolution of Algae</b> Algae do not constitute one related group but several independent evolutionary lineages. The morphology and biology of the major groups of these lineages will be presented.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Knowledge of specific groups of plants and their systematic and taxonomic classification as well as their plant geography; knowledge of the evolution and formation of tribes of phanerogams and/or algae.		
	<b>Admission requirements:</b> none		

<b>2.</b>	<b>Elective module: Plant Diversity and Systematics – Woody Plants, Lichens, Mosses and Pteridophytes</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VU Woody Plants</b> Morphology, systematics and use of selected woody plants with varying focus on different groups. Particular focus will be put on native and imported as well as cultivated species.	3	4.5
<b>b.</b>	<b>VU Lichens, Mosses and Ferns</b> The morphology, biology and evolution of these groups will be introduced based on characteristic examples, and their systematic characteristics will be discussed on the basis of the present state of knowledge.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Specialised knowledge of the spontaneous and cultivated wood flora in Central Europe; extended knowledge of cryptogams reaching from lichens to ferns		
	<b>Admission requirements: none</b>		

<b>3.</b>	<b>Elective module: Plant Diversity and Systematics</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>EU Excursion with integrated practical parts</b> Selected regions in Austria and abroad will be investigated in terms of flora, vegetation composition and vegetation history. Location factors and the effects of human impact will be discussed and analysed.	3	4.5
<b>b.</b>	<b>VO Applied Botany</b> Agricultural plants or medicinal plants, poisonous plants and spice plants or floral ecology and their uses and/or significance will be treated.	1	1.5
<b>c.</b>	<b>SE Botanical Seminar</b> Presentation and discussion of scientific papers on Plant Systematics, Palynology, Palaeoecology, Dendroecology, Plant Ecology and Hydrobotany.	1	1.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Ability to comprehend selected habitats in terms of flora, vegetation composition and ecology. Deepening of the students' knowledge in Botany. A good command of presentation and discussion techniques, and teamwork abilities.		
	<b>Admission requirements: none</b>		

<b>4. A</b>	<b>Elective module: Special Hydrobotany</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VO Special Hydrobotany</b> The special morphological and ecophysiological adaption of plants to life in water will be presented. A further core topic will be the discussion of processes and control mechanisms of planktonic and benthic primary productivity as well as their role for abiotic and biotic cycles in the ecosystem.	1	1.5

<b>b.</b>	<b>VU Phytoplankton and Phytobenthos</b> Diversity and species traits of planktic and benthic algae and macrophytes and their niche differentiation in the ecosystem will be the core topics. Students will acquire skills in all steps from in-field sampling to the specification of morphological and ultrastructural characteristics of taxa for identification and quantification.	3	4.5
<b>c.</b>	<b>SE Water Quality Monitoring</b> This course is centred on essential basics for the assessment, restoration and renaturation of water bodies using plants. Participants will present different indication and assessment systems and elaborate and discuss examples.	1	1.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Ability to theoretically and practically assess the ecological water quality by means of plants in accordance with specific EU-criteria (saprobic and trophic status, and hydraulics)		
	<b>Admission requirements: Of the alternating elective modules 4A and 4B, only one elective module can be selected.</b>		

<b>4. B</b>	<b>Elective module: Applied Hydrobotany</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>PJ Project Study on Hydrobotany</b> Current issues regarding the botanical and ecological monitoring of water bodies will be elaborated in teams, on field trips and in the laboratory. Participants will acquire skills in all steps from defining the problem to reporting and orally presenting the results.	5	7.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Ability to analyse a water body with plant indication systems applying modern methods (e.g. multivariate statistical analysis or electron microscopy) in accordance with European standards and to interpret the results.		
	<b>Admission requirements: Of the alternating elective modules 4A and 4B, only one elective module can be selected.</b>		

<b>5.</b>	<b>Elective module: Plant Ecology I</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VO Vegetation Ecology I</b> Students will acquire further knowledge on the scientific basics, issues and methods of vegetation ecology.	2	3
<b>b.</b>	<b>VU Population Ecology I</b> Concepts and methods of population ecology will be presented. In the practical part, students will apply experimental or statistical methods on current scientific issues.	3	4.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Basic knowledge of the concepts, methods and fields of application of vegetation and population ecology		
	<b>Admission requirements: none</b>		

<b>6.</b>	<b>Elective module: Plant Ecology III</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>PJ Project study: Diversity of a Selected Habitat</b> Habitats will be analysed and/or mapped from the point of view of flora, environmental conditions, community composition and population ecology. Particular focus will be put on modern sampling methods and analysis and on profound scientific interpretation.	3	4.5
<b>b.</b>	<b>EU Diversity of Selected Habitats in Austria and Abroad</b> Students will learn about different plant communities and environmental conditions in Austria and abroad.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Basic theoretical and practical skills necessary to answer questions on specific floristic and plant ecology issues. Team working and problem solving skills.		
	<b>Admission requirements: none</b>		

<b>7.</b>	<b>Elective module: Palynology and Archaeobotany I</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VO Quaternary Vegetation History</b> Change in phytodiversity in the Quaternary resulting from anthropogenic and climatic influences.	1	1.5
<b>b.</b>	<b>VU Plant Macrofossil Analysis</b> This course will treat the development of fossil sediments (Taphonomy), the representative significance of plant residues (Biostratonomy) and their paleoecological exploitation with regard to global climate change.	1	1.5
<b>c.</b>	<b>VU Pollen Analysis</b> This course will treat the statistical exploitation of pollen rain in residues as a means of reconstructing past environments and in order to construct hypothesis tests in the context of global climate change.	2	3
<b>d.</b>	<b>SE Scientific Writing and Publishing</b> Students will acquire basic knowledge on international conventions for scientific writing and apply the acquired skills by writing a representative sample text.	1	1.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Skills and competences necessary to autonomously plan and elaborate paleoecological studies on the vegetation and climate change in the Quaternary with particular focus on anthropogenic influences. Basic rules for scientific publications.		
	<b>Admission requirements: none</b>		

<b>8.</b>	<b>Elective module: Palynology and Archaeobotany II</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VO Palaeobotany</b> Origin, evolution and propagation of plants in geological history from the Precambrian age (2.1 billion years) to the Pliocene/Cenozoic Age (1.8 million years)	1	1.5
<b>b.</b>	<b>VU Palaeoethnobotany and Synanthropisation</b> This course will treat the relationship between plants and prehistoric humans. Students will be introduced to in-field and laboratory methods for the analysis of prehistoric plant material and their floristic, ecologic and archaeological interpretation.	2	3
<b>c.</b>	<b>VU Bog Types</b> Introduction to the typification of bogs on the basis of peat-building vegetation in changing mineral and water conditions.	1	1.5
<b>d.</b>	<b>VU Pollen Morphology and Systematics</b> This course will treat the significance of pollen for systematic botany and introduce students to the structure and function of pollen as well as practical applications of pollen morphology.	1	1.5
<b>Total</b>		<b>5</b>	<b>7.5</b>
<b>Learning objectives:</b> Skills and competences necessary to autonomously plan and elaborate palaeoecological studies. Knowledge of the present types of bogs in Europe. Knowledge on the evolution and propagation of plants since the Precambrian age.			
<b>Admission requirements: none</b>			

<b>9.</b>	<b>Elective module: Dendroecology and -climatology</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VO Physiology of Woody Plants</b> Students will be introduced to growth- and development-specific characteristics of trees as well as their adaptability to extreme environmental factors.	1	1.5
<b>b.</b>	<b>VO Dendroecology and -climatology</b> Basics and current applications of tree ring analysis as a method in Palaeoecology, Forest Ecosystem Research and Ecophysiology.	2	3
<b>c.</b>	<b>VU Special Topics in Dendroecology and -climatology</b> Students will be introduced to the basics of wood anatomy and working techniques in growth analysis for ecologic and climatologic studies in forests.	2	3
<b>Total</b>		<b>5</b>	<b>7.5</b>
<b>Learning objectives:</b> Command of the methodology necessary to autonomously plan and elaborate growth analysis studies in forest ecosystems			
<b>Admission requirements: none</b>			



10.	Elective module: Plant Physiology – Cell Physiology of Plants	Sem. hours	ECTS credits
a.	<b>VU Cell Physiology of Plants</b> In this practical course with theoretical introductions, students will acquire skills in sophisticated experimental procedures. The trials used in this course are based on current research and can prepare students for their Master's Thesis.	4	6
b.	<b>SE Seminar on Plant Physiology</b> In this seminar, students will present current issues in the field of Plant Physiology on the basis of their own work (current Master's Theses) or recent publications.	1	1.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Knowledge on experimental cell physiological procedures in plants and investigation of current publications		
	<b>Admission requirements:</b> none		

11.	Elective module: Plant Physiology – Biotechnology of Plants	Sem. hours	ECTS credits
a.	<b>VU Special Plant Physiology</b> This lecture with practical parts on plant physiology will introduce students to special current research projects and issues and present modern plant physiological methods.	2	3
b.	<b>VO Plant Biotechnology</b> Plant biotechnology uses plant systems for production purposes. Its application ranges from the cultivation and breeding of agricultural and ornamental plants to the development of technical and pharmaceutical raw materials. In this lecture, main techniques and fields of application will be discussed.	1	1.5
c.	<b>UE Practical Course on Plant Biotechnology</b> Students will get acquainted with the main biotechnological procedures in the field of cell and tissue culture of plants in practice. The presented cultivation techniques are applied on a large scale in the cultivation and true breeding of plants, but are also indispensable for fundamental research.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Practical experience in the field of Physiology and Biotechnology of plants		
	<b>Admission requirements:</b> none		

12.	Elective module: Physiological Plant Ecology	Sem. hours	ECTS credits
a.	<b>VO Water Relations and Mineral Nutrition of Plants</b> Hydrologic and mineral balance of plants will be analysed from a physiological point of view – absorption, circulation, storage/ incorporation, release – as well as from an ecophysiological point of view – effects of environmental factors, functional biodiversity (constitutional types), location requirements (habitat fitness).	2	3

<b>b.</b>	<b>VO Plant Carbon Relations</b> This lecture will outline the main aspects of the carbon cycle in plants (photosynthesis, respiration, assimilate transport, carbon balance, etc.) and discuss their fundamental relevance in biological systems from plants to ecosystems.	1	1.5
<b>c.</b>	<b>UE Practical Course on Plant Ecophysiology</b> Modern research topics and methods concerning plant hydraulics and carbon relations will be presented. Students will formulate and solve problems and acquire the necessary "scientific skills" at the interface between physiology and ecology.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Basic knowledge of the effects of environmental factors on plants		
	<b>Admission requirements: none</b>		

<b>13.</b>	<b>Elective module: Physiological Ecology of Alpine Plants</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VU Physiological Ecology of Alpine Plants</b> The functional plasticity of alpine plants (biodiversity) will be discussed on the basis of a characteristic spectrum of species from the alpine habitat (from the sub-alpine forest to the nival zone). Micrometeorological methods along an altitudinal gradient will outline the significance of ecophysiological adaptations of plants to specific location conditions.	4	6
<b>b.</b>	<b>SE Seminar on Physiological Ecology of Alpine Plants</b> Measurement data from the practical course will be used to elaborate posters and scientific publications.	1	1.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Methodical skills necessary to solve specific problems related to the adaptability of plants in the framework of the alpine habitat, including scientific publication		
	<b>Admission requirements: none</b>		

<b>14.</b>	<b>Elective module: Stress Physiology of Plants</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VU Stress Physiology of Plants</b> The impact of selected abiotic stress factors on plants and the major physiological bases of mechanisms of tolerance and resistance will be outlined on the basis of examples, and students will be familiarised with the most current stress-physiological methods in specific case studies.	3	4.5
<b>b.</b>	<b>VU Plant Biophysics</b> Physics has a major influence on plants. This lecture will introduce students to important basic aspects of relevant topics such as mechanics, hydraulics or optics and present the often spectacular biophysics of plants. In addition, successful applications derived from bionics will be discussed.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Knowledge of stress mechanisms and resistance in plants and their adaptation strategies.		

	<b>Admission requirements: none</b>
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15.	Elective module: Developmental and Cellular Biology of Plants	Sem. hours	ECTS credits
<b>a.</b>	<b>VU Developmental Biology of Plants I</b> On the basis of growth-related morphological changes, physiological and molecular mechanisms and their effect on the development of plants will be analysed. In the practical part, students will study the influence of phytohormones and environmental factors on growth and development, statistically analyse the results and present them in the form of a publication.	3	4.5
<b>b.</b>	<b>VO Cellular Biology of Plants</b> This lecture will treat special features of cellular biology in plants (e.g. cell wall, vacuole, plastids) on the basis of cellular structures (organelles, cytoskeletal elements). A brief overview of preparation methods will also be given.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Students will acquire knowledge on the principles of plant development and special features of cellular structures in plants.		
	<b>Admission requirements: none</b>		

16.	Elective module: Cellular and Molecular Biology of Plants	Sem. hours	ECTS credits
<b>a.</b>	<b>VU Confocal- and Electron Microscopy</b> This course will introduce students to the fixation and preparation techniques of confocal and electron microscopy. Students will autonomously work on the fixation for transmission electron microscopy (TEM) and the fluorescent labelling for CLSM.	3	4.5
<b>b.</b>	<b>VO Molecular Biology of Plants</b> The lecture will present modern methods in genetic engineering and current approaches and objectives in plant breeding. Apart from their significance for the future development of agriculture, ecological and health risks, control mechanisms, legal regulations etc. will be presented.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Insight into specific methods of molecular biology and confocal and electron microscopy for plants.		
	<b>Admission requirements: none</b>		

17.	<b>Elective module: Special Developmental Biology of Plants</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VU Developmental Biology of Plants II</b> The lecture part will treat the physiological and molecular mechanisms of the reproductive development and the impact of environmental factors on the development processes. The practical part will introduce students to the different phases of reproductive development (from flower development to seed maturation), the dynamics of reproductive development, the reproductive system and reproductive success on the basis of a model organism.	3	4.5
<b>b.</b>	<b>VU Reproductive Biology of Seed Plants</b> The structure and function of reproductive tissues in various stages of development and their variability in seed-bearing plants will be presented and explored using special microscopic preparation techniques. In this course, students will acquire the structural basics for the course “Developmental Biology of Plants II”.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Detailed knowledge of the reproductive development of plants		
	<b>Admission requirements: none</b>		

18.	<b>Elective module: Theory of Science and Gender Research</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
<b>a.</b>	<b>VO Nature as a Political Subject</b> Concept of and reference to nature in the context of science, culture and society	2	3
<b>b.</b>	<b>VO Philosophy of Science and Ethics – Lecture</b> Introduction to Science Theory and its relation to other scientific disciplines, Science Theory in Biology (particularly Evolutionary Biology) as well as basics in Scientific and Environmental Ethics under consideration of gender aspects.	2	3
<b>c.</b>	<b>SE Philosophy of Science and Ethics – Seminar</b> In-depth discussion of selected problems treated in the lecture “Philosophy of Science und Ethics “	1	1.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Under consideration of gender aspects, students will acquire a basic knowledge of Science Theory in Biology, its relation to other scientific disciplines and its historical development, as well as a basic instrument of terms and concepts related to ethics, which will enable them to autonomously reflect on ethical questions related to science and the application of their knowledge in Biology.		
	<b>Admission requirements: none</b>		

19. 20.	<b>Elective module: Modules from other Master's programmes of the Faculty of Biology</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
a.	A maximum of two modules (7.5 ECTS credits each) from the Master's programmes "Ecology and Biodiversity", "Microbiology" or "Molecular Cellular and Developmental Biology" at the University of Innsbruck can be selected.		2 x 7.5
	<b>Total</b>		<b>7.5/7.5</b>
	<b>Learning objectives:</b> Students will acquire an insight into other areas of Biology according to the learning objectives defined for the respective module.		
	<b>Admission requirements:</b> Students must meet the admission requirements defined in the respective curricula.		

21.	<b>Elective module: Classical and Molecular Plant Biogeography</b>	<b>Sem. hours</b>	<b>ECTS credits</b>
a.	<b>VU Plant Biogeography</b> This course is centred on the question of how and why the biological diversity varies in space and time. In the practical part of the lecture, recent publications on this topic will be discussed.	2	3
b.	<b>EU Distribution Patterns of Alpine Plants</b> Students will visit areas with a rich flora and work out the complete regional and local distribution patterns of selected plant species, with additional focus on niche differentiation.	1	1.5
c.	<b>UE DNA Markers in Biogeography, Plant Systematics and Evolutionary Research</b> This course is a practical introduction to various methods for the generation of DNA data (DNA sequencing, DNA fingerprinting). In addition, theoretical and practical analytic methods (particularly computer programs for phylogenetic and/or population-genetic data analysis) will be presented.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Learning objectives:</b> Basic knowledge of Biogeography in general and the development of biodiversity in the Alpine flora in relation to space and time. Ability to autonomously treat biogeographical and evolutionary issues using molecular methods.		
	<b>Admission requirements:</b> none		

## § 8 Master's Thesis

- (1) Students of the Master's Degree Programme in Botany have to write a Master's Thesis equalling 27.5 ECTS credits. The Master's Thesis is a scientific piece of work which serves to prove the student's ability to autonomously cope with scientific questions using adequate scientific methods. Possible topics include all questions related to knowledge creation in modern research in Botany.

## § 9 Examination regulations

- (1) A module is completed when the student has passed all the required courses.
- (2) For lectures, the lecturer is required to communicate evaluation methods and criteria (oral and/or written) before the course starts.
- (3) The evaluation of courses with continuous performance assessment (VU, UE, PS, SE, EX, EU, PJ) is based on the student's regular, written and/or oral and/or practical contributions. The lecturer is required to communicate evaluation methods and criteria before the course starts.
- (4) The evaluation of the student's final Master Thesis defence (Defensio) is based on an oral exam before an examination board which is made up of three examiners including the Master's Thesis supervisor.

## § 10 Academic degree

Graduates of the Master's Programme in Botany are awarded the academic degree of "Master of Science", or "MSc", in brief.

## § 11 Implementation

- (1) This curriculum shall come into effect on 1 October 2008.
- (2) The changes to the curriculum in the version published in the University of Innsbruck Bulletin of 23 June 2010, Issue 24, No. 328, shall come into effect on 1 October 2010 and shall be applied to all students.

## § 12 Transitional provisions

- (1) Regular students who enrolled in the "Magister" Programme in Botany (Curriculum of 7 July, 2003) at the University of Innsbruck before 1 October 2008 shall be entitled to complete their studies within a period of six semesters following the implementation of this curriculum.
- (2) Unless the student completes the "Magister" Programme in Botany (Curriculum of 7 July, 2003) within this period, he/she shall be subjected to the Curriculum for the Master's Degree Programme in Botany.
- (3) Students shall be entitled to choose to be subjected to the Curriculum for the Master's Degree Programme in Botany at any time.
- (4) In compliance with § 11 para. 3, course examinations according to the Curriculum for the Master's Programme in Botany in the version published in the University of Innsbruck Bulletin of 29 April 2008, Issue 40, No. 269, shall correspond to course examinations according to the Curriculum in the version published in the University of Innsbruck Bulletin of 23 June 2010, Issue 42, No. 328, as follows:

<b>Course according to the Curriculum of 2008</b>	<b>Course according to the Curriculum of 2010</b>
Elective module 6A: Plant Ecology II	Elective module 5: Plant Ecology I
Elective module 6B: Plant Ecology III	Elective module 6: Plant Ecology III
Elective module 7Aa: Pollen Morphology and Systematics VU3	Elective module 7c and Elective module 8d: Pollen Morphology and Systematics VU1 and Pollen Analysis VU2
Elective module 7A: Vegetation History VO2	Elective module 7a and Elective module 8c: Quaternary Vegetation History VO1 and Bog

	Types VU1
Elective module 7Ba: Pollen Analysis VU2	Elective module 7c: Pollen Analysis VU 2
Elective module 7Bb: Bog Types VU 2	Elective module 7a and Elective module 8c Quaternary Vegetation History VO1 and Bog Types VU1
Elective module 7Bc: Academic Publishing SE 1	Elective module 7d: Scientific Writing and Publishing SE 1
Elective module 8Aa: Palaeoethnobotany VU3	Elective module 7b and Elective module 8b: Plant Macrofossil Analysis VU1 and Palaeoeth- nobotany and Synanthropisation VU2
Elective module 8Ab: Evolution and Distribution of Cultivated Plants VO1	Elective module 8b Palaeoethnobotany and Synanthropisation VU2
Elective module 8Ac: Palaeobotany VO1	Elective module 8a: Palaeobotany VO1
Elective module 8Ba: Macrofossil Analysis VU3	Elective module 7b and Elective module 8b Plant Macrofossil Analysis VU1 and Palaeoeth- nobotany and Synanthropisation VU2
Elective module 8Bb: Synanthropisation VO 1	Elective module 8b: Palaeoethnobotany and Synanthropisation VU2
Elective module 9a: Dendroecology and Climatology VO2	Elective module 9b Dendroecology and -climatology VO2
Elective module 9b: Special Dendroecology and Climatology VU 3	Elective module 9a and Elective module 9c: Physiology of Woody Plants VO1 and Special Topics in Dendroecology and -climatology VU2

For the Curriculum Committee:

Ao.Univ.Prof. Mag. Dr. Paul Illmer

For the Senate:

Univ.Prof. Dr. Ivo Hajnal