Note:

The following curriculum is a consolidated version. It is legally non-binding and for informational purposes only.

The legally binding versions are found in the University of Innsbruck Bulletins (in German).

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Complete Version as of 1 October 2015
Curriculum for the
Master's Programme Botany
at the Faculty of Biology of the University of Innsbruck

§ 1 Classification of the study programme

According to §54 Para1 Universities Act 2002 the Master's Programme Botany belongs to the group of studies in the Natural Sciences.

§ 2 Qualification profile

(1) Graduates of the Master's Programme Botany have the necessary knowledge as well as the required skills and competences to find methodologically sound answers to subject-specific questions related to research in botany and to apply them in practice.

(2) Graduates are able to scientifically evaluate and further develop areas of botany and to apply their acquired knowledge in an interdisciplinary way.

(3) Graduates have the competence to independently develop and increase their knowledge and understanding in the field of botany.

(4) Graduates are able to find scientifically sound solutions to problems based on theories and methods. This competence enables them to deal with pertinent problems of their respective professional fields backed by science and oriented towards practice. Possible professional fields:

- research and teaching at universities, universities of applied sciences and other national or international research institutions,
- scientific and managerial positions in private and public businesses and institutions (e.g. in the fields of biology and environmental sciences, agriculture and forestry, cultivating and breeding of plants, plant biotechnology, environmental and nature protection, pharmacy, medicine, food analysis, scientific journalism, public administration), in natural science museums, botanic garden and nature reserves,
- work as consultants or authorized experts for private and public businesses, e.g. for questions on environmental and nature protection (municipalities, provinces, public administration authorities), in planning and conservation of landscapes, for climatic and vegetation change, for biodiversity documentation, for bio and environment monitoring,

(5) The Master's Programme Botany provides an in-depth scientific training based on pertinent bachelor programmes. The master programme also prepares for a doctoral study programme.

§ 3 Scope and duration

The Master's Programme Botany comprises 120 ECTS-Credits. This corresponds to a duration of the studies of four semesters. One ECTS-Credit corresponds to a workload of 25 hours.

§ 4 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 Programme in Botany.

(2) A completed Bachelor Programme Biology at the University of Innsbruck is in any case a relevant study programme. The rectorate decides based on the regulations specified in the Universities Act on the admission for graduates having completed other study programmes at approved Austrian or non-Austrian post-secondary education institutions and on the equivalence of the achievements.

(3) In the event that equivalence has been established in principle but with certain qualifications missing for full equivalence, supplemental examinations may be required. These examinations must be completed during the Master's Programme.

§ 5 Types of courses and maximum number of students per course

(1) Courses without continuous performance assessment:

Lectures (VO) are courses held in lecture format. They introduce the research areas, methods and schools of thought for a given subject. Maximum number of participants: 300

(2) Courses with continuous performance assessment:

1. **Introductory seminars** (PS) introduce students interactively to scientific literature through the treatment of selected issues. They convey knowledge and methods of academic work. Maximum number of participants: 15–20
2. **Practical courses** (UE) focus on the practical treatment of concrete scientific tasks within an area. Maximum number of participants: 8–16
3. **Seminars** (SE) provide in-depth treatment of scientific topics through students' presentations and discussion thereof. Maximum number of participants: 10–30
4. **Lectures with practical elements** (VU) focus on the practical treatment of concrete scientific tasks that are discussed during the lecture parts of the course. Maximum number of participants: 8–16
5. **Excursions with practical elements (**EU) conducted outside the premises of the university, serve to demonstrate and deepen course contents through practical experience with concrete scientific tasks. Maximum number of participants: 14–20
6. **Project studies** (PJ) promote scientific collaboration of two or more fields through the treatment of multidisciplinary topics and the use of various methods and techniques. Maximum number of participants: 10

§ 6 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. Students of the Master's Programme in Botany are to be given priority.
3. Number of semesters the students have been enrolled for the Master's Programme in Botany; students who have been enrolled for a longer time are to be given priority.
4. By lot.

§ 7 Compulsory and elective modules

(1) The following compulsory modules covering 20 ECTS-Credits must be passed:

1.	**Compulsory Module: Instructions for Scientific Working**	**h**	**ECTS-Credits**
	PS Instructions for Scientific Working	1	15
	Total	**1**	**15**
	Objective: Students are able to formulate scientific questions based on the latest scientific findings for their Master's Thesis. They are able to develop hypothesis, test them with suitable methods and reflect on the results in scientific discourse.		
	Prerequisites: none		

2.	**Compulsory Module: Selected Chapters of Botany**	**h**	**ECTS-Credits**
a.	**SE Botanical Seminar: Scientific Writing and Presenting**	1	1.5
b.	**PS Botanical Colloquium**	1	1
	Total	**2**	**2.5**
	Objective: The students are able to present own scientific results and actively take part in scientific discussions. They know the international norms and conventions with respect to structure and content of scientific publications.		
	Prerequisites: none		

3.	**Compulsory Module: Master's Thesis Defense**	**h**	**ECTS-Credits**
	Final oral defense of the Master's Thesis before an examination board		2.5
	Total		**2.5**
	Objective: Examination of the Master's Thesis in the overall context of the Master's Programme; with special focus on theoretical comprehension, methodical issues, communication of findings of the Master's Thesis and presentation skills.		
	Prerequisites: positive evaluation of all other compulsory and elective modules as well as the Master's Thesis.		

(2) Elective modules corresponding to 72.5 ECTS-Credits must be passed:

1.	Elective Module: Plant Diversity in Selected Native Habitats	h	ECTS-Credits
a.	**VU Diversity of Selected Seed Plants**	2	2.5
b.	**EU Flora and Vegetation of the Eastern Alps and Adjacent Areas**	3	2.5
	Total	**5**	**5**
	Objective: Students are able to capture selected native habitats with regards to their flora, vegetation and ecology. They are able to distinguish different kinds and species of selected groups of native spermatophytes and are able to apply this knowledge to other groups.		
	Prerequisites: none		

2.	Elective Module: Plant Diversity and Systematics	h	ECTS-Credits
a.	**VU Diversity of Selected Plants II**	3	4
b.	**VU Lichens, Bryophytes, Ferns**	1	1.5
c.	**VO Evolution of Algae**	1	1.5
	Total	**5**	**7.5**
	Objective: Students are able to distinguish species and kinds of native spermatophytes of selected habitats and can apply this knowledge on other groups. They are also able to recognize common native lichen, moss and ferns and explain the fundamentals of evolutionary ecology and the identification of algae.		
	Prerequisites: none		

3.	Elective Module: Methods of Evolutionary Biology, Plant Systematics and Biogeography	h	ECTS-Credits
a.	**VO Plant Evolution**	1	1.5
b.	**VU Methods in Evolutionary Research, Plant Systematics and Biogeography**	3	6
	Total	**4**	**7.5**
	Objective: Students are able to discuss the evolution of plants and are able to use their knowledge for finding solutions to theoretical and practical tasks. They can independently solve questions posed in evolutionary research by applying molecular and classical methods.		
	Prerequisites: none		

4.	Elective Module: Biogeography	h	ECTS-Credits
a.	**VU Biogeography**	2	3
b.	**EU Excursion with Practical Course**	3	4.5
	Total	**5**	**7.5**
	Objective: Students are able to discuss patterns and processes of general biogeography and the spatiotemporal emergence of biodiversity. They are able to acquire knowledge of a different floristic region and understand complex biogeographical interrelations.		
	Prerequisites: none		

5.	Elective Module: Biodiversity in Transition	h	ECTS-Credits
a.	**VO Neobiota**	2	3
b.	**VU Anthropogenic Flora and Vegetation**	2	4.5
	Total	**4**	**7.5**
	Objective: Students know important invasive alien species (IAS) and key processes of biological invasions. They are able to use their knowledge for problems relating to nature protection. They are able to see and assess the impact of alien species on the native flora and vegetation as well as on man and environment.		
	Prerequisites: none		

6.	Elective Module: Vegetation and Population Ecology	h	ECTS-Credits
a.	**VO Vegetation Ecology**	2	3
b.	**VU Population Ecology**	3	4.5
	Total	**5**	**7.5**
	Objective: Students are familiar with the vegetation zones of the Earth and understand which processes determine their distribution. They are able to analyse questions in population ecology and to interpret the results won.		
	Prerequisites: none		

7.	Elective Module: Analysis of Vegetation I	h	ECTS-Credits
a.	**PJ Sampling and Analyses of Vegetation Data**	2	3
b.	**EU Vegetation of High Altitudes**	2	2
	Total	**4**	**5**
	Objective: Students can collect, analyse and describe plant communities in the outdoors.		
	Prerequisites: none		

8.	Elective Module: Analysis of Vegetation II	h	ECTS-Credits
a.	**PJ Evaluation of Plan Communities**	2	3
b.	**EU Excursion to Another Biogeographic Unit**	3	4.5
	Total	**5**	**7.5**
	Objective: Students are able to carry out research in vegetation studies and assess vegetation based on ecological criteria. They have knowledge of the flora and vegetation of a foreign flora region.		
	Prerequisites: none		

9.	Elective Module:	h	ECTS-Credits
a.	**VU Palaeoecological Concepts and Methods**	3	4.5
b.	**VO Quaternary Vegetation and Climatic Change**	1	1.5
c.	**PJ Paleoecology of Selected Sites**	1	1.5
	Total	**5**	**7.5**
	Objective: Students are familiar with the concepts of vegetation change caused by climatic change or by men during the Quaternary period. They are able to document, interpret and critically discuss paleoecological data on vegetation change and to use the data to develop their own research concepts.		
	Prerequisites: none		

10.	Elective Module: Vegetation in Transition II	h	ECTS-Credits
a.	**VU Palynology and Archaeobotany: The Human Factor**	2	3
b.	**VO Holocene Vegetation Evolution in Central Europe**	1	1.5
c.	**PJ Vegetation and Climate Change**	2	3
	Total	**5**	**7.5**
	Objective: Students are familiar with the analysis, interpretation and critical discussion of palynological and paleoethnobotanical methods and data on Holocene (postglacial) vegetation development with special focus on climatic and anthropogenic influences.		
	Prerequisites: none		

11.	Elective Module: Hydrobotany	h	ECTS-Credits
a.	**VU Molecular Taxonomy and Ecophysiology of Algae**	2	3
b.	**EU Project Study Hydrobotany**	3	4.5
	Total	**5**	**7.5**
	Objective: Students are able to use microscopic-taxonomical, field-analytical and molecular instruments to perform ecological evaluation and monitoring tasks.		
	Prerequisites: none		

12.	Elective Module: Cell Biology	h	ECTS-Credits
a.	**VO Cell Biology**	2	3
b.	**VU Ultrastructure of Plant Cells**	3	4.5
	Total	**5**	**7.5**
	Objective: Students know the most important components of plant cells and are able to use simple preparation techniques for structural and ultrastructural examinations with confocal- and transmission electron microscopes.		
	Prerequisites: none		

13.	Elective Module: Physiology I: Metabolism and Biochemistry	h	ECTS-Credits
a.	**VU Plant Metabolism and Biochemistry**	4	6
b.	**SE Seminar Plant Physiology**	1	1.5
	Total	**5**	**7.5**
	Objective: Students analyse the metabolism of plants and can interpret reactions of plants of environmental stress. They apply modern methods of analysis for measuring metabolites (e.g. chromatographic methods and metabolomics). They are able to demonstrate their knowledge during discussion of current publications.		
	Prerequisites: none		

14.	Elective Module: Physiology II: Development	h	ECTS-Credits
a.	**VO Biotechnology and Genetic Engineering**	1	1.5
b.	**VU Developmental Biology**	2	3
c.	**UE Biotechnology**	2	3
	Total	**5**	**7.5**
	Objective: Students understand the fundamentals of plant development and their sensitivity to influences. They are familiar with the most important technologies in the area of biotechnology and genetic engineering and apply their knowledge in plant cultivation for breeding and propagation of plants.		
	Prerequisites: none		

15.	Elective Module: Physiology III: Stress	h	ECTS-Credits
a.	**VU Stress Physiology**	3	4.5
b.	**VU Molecular Stress Physiology**	2	3
	Total	**5**	**7.5**
	Objective: Students know, can interpret and apply in practice exemplary stress-physiological reaction patterns of plants.		
	Prerequisites: none		

16.	Elective Module: Ecophysiology I: Plant and Environment	h	ECTS-Credits
a.	**VO Ecophysiology**	2	3
b.	**UE Practical Course Ecophysiology**	2	3
c.	**SE Seminar Ecophysiology**	1	1.5
	Total	**5**	**7.5**
	Objective: Students have theoretical and methodological knowledge in the field of ecophysiology of plants and are able to analyse, interpret and critically discuss their own data and the data of others based on the current state of knowledge.		
	Prerequisites: none		

17.	Elective Module: Ecophysiology II: Alpine Plants	h	ECTS-Credits
a.	**VU Functional Biology of Alpine Plants**	4	6
b.	**SE Ecophysiology of Alpine Plants**	1	1.5
	Total	**5**	**7.5**
	Objective: Students are familiar with specific functional adaptations of plants in the high mountains to the abiotic challenges of the alpine area, can distinguish them to others and use them specifically as models of abiotic resistance of plants.		
	Prerequisites: none		

18.	Elective Module: Ecophysiology III: Agriculture and Forestry	h	ECTS-Credits
a.	**VU Applied Aspects in Agriculture and Forestry**	3	4
b.	**EU Excursion Ecophysiology**	1	1
	Total	**4**	**5**
	Objective: Students have ecophysiological knowledge in the fields of agriculture and forestry and can apply their knowledge in practice.		
	Prerequisites: none		

19.	Elective Module: Ecophysiology IV: Tree Growth	h	ECTS-Credits
a.	**VO Growth Physiology**	1	1.5
b.	**VO Tree Growth and Environment**	2	3
c.	**VU Methods**	2	3
	Total	**5**	**7.5**
	Objective: Students have knowledge of tree characteristics specific to growth and evolution and of their adaptability to extreme environmental conditions. They are also familiar with growth-analytical working techniques for conducting ecophysiological examinations in forests.		
	Prerequisites: none		

20.	Elective Module: Philosophy of Science and Gender Research	h	ECTS-Credits
a.	**SE Nature as a Political Subject**	2	3
b.	**VO Philosophy of Science and Ethics**	2	3
c.	**SE Philosophy of Science, Ethics and Gender Research**	1	1.5
	Total	**5**	**7.5**
	Objective: In consideration of gender aspects, students are able to understand the peculiarities of biology in relation to the philosophy of science, its relationship with other disciplines and its history. Moreover, the students have a command of basic ethic terms and approaches, which enables them to independently reflect on ethical questions of research in biology and its application.		
	Prerequisites: none		

21.	Elective Module: Selected Chapters of Botany I	h	ECTS-Credits
a.	**VU Current Topics in Botany**	1	1.5
b.	**SE Seminar Current Topics in Botany**	1	1
	Total	**2**	**2.5**
	Objective: With the courses offered in this module (partly held by guest lecturers) students get an insight into selected chapters of botanical sub-disciplines that are not covered by the elective modules 1-20.		
	Prerequisites: none		

22.	Elective Module: Selected Chapters of Botany II	h	ECTS-Credits
a.	**VO Current Topics in Botany**	1	2
b.	**UE Practical Course Current Topics in Botany**	2	3
	Total	**3**	**5**
	Objective: With the courses offered in this module (partly held by guest lecturers) students get an insight into selected chapters of botanical sub-disciplines that are not covered by the elective modules 1-21.		
	Prerequisites: none		

23.	Elective Module: Module from other Master Programmes of the Faculty of Biology	h	ECTS-Credits
	A module from another Master Programme of the Faculty of Biology of the University of Innsbruck can be passed.		5
	Total		**5**
	Objective: The objectives defined by the respective module give the students insights into another field of biology.		
	Prerequisites: The prerequisites specified by the respective curricula must be met.		

24.	Elective Module: Interdisciplinary Skills	h	ECTS-Credits
	Courses corresponding to 7.5 ECTS-Credits and providing to availability of places can be freely chosen from the curricula of the Master and/or Diploma Programmes at the University of Innsbruck.		7.5
	Total		**7.5**
	Objective: This module serves to expand the study programme and to acquire additional qualifications.		
	Prerequisites: The prerequisites specified by the respective curricula must be met.		

§ 8 Master's Thesis

(1) Students of the Master's Programme in Botany have to write a Master's Thesis equaling to 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

(2) Possible topics include all questions related to increasing knowledge in modern research in botany.

(3) Students are entitled to write their Master's Thesis in English if their supervisor agrees to it.

(4) It is possible for several students to work on one topic, if it is possible to separately evaluate the achievements of the individual students.

§ 9 Examination regulations

(1) Modules are evaluated by module examinations. Module examinations are examinations that serve to prove the knowledge and skills acquired in a module. If all parts of a module examination have been positively evaluated, the respective module is passed.

(2) The courses of the modules are evaluated by means of course examinations. Course examinations are

1. examinations that serve to demonstrate the knowledge and skills gained in a single course and where the performance is assessed with a single exam at the end of the course. The course lecturer must communicate the examination method (written and/or oral) and the evaluation criteria before the start of the course.

2. examinations on courses with continuous performance assessment, where the evaluation is based on the student's regular, written and/or oral contributions. The course lecturer must communicate the examination method (written and/or oral) and the evaluation criteria before the start of the course.

(3) Assessment of the compulsory module “Master’s Thesis Defense” is based on an oral exam before an examination board consisting of at least three examiners.

§ 10 Academic degree

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

§ 11 Coming into Force

(1) This curriculum comes into force on 1 October 2008.

(2) The modification of the curriculum in the version of the University of Innsbruck Bulletin of 23 June 2010, Issue 42, No. 328 comes into effect on 1 October 2010 and is to be applied to all students.

(3) The modification of the curriculum in the version of the University of Innsbruck Bulletin of 6 May 2015, Issue 25, No. 385 comes into effect on 1 October 2015 and is to be applied to all students.

§ 12 Transitional Provisions

(1) Positively passed elective modules according to the regulations of the curriculum for the Master’s Programme in Botany in the version of the University of Innsbruck Bulletin of 29 April 2008, Issue 40, No. 269 with the modifications published in the University of Innsbruck Bulletin of 23 June 2010, Issue 42, No. 328 (in the following referred to as curriculum 2008) count as elective modules for the curriculum in the version of the University of Innsbruck Bulletin of 6 May 2015, Issue 25, No. 385 (in the following referred to as curriculum 2015).

(2) Elective modules of the curriculum 2015 that have the same contents as a passed elective module of the curriculum 2008 or contain a course according to the curriculum 2008 may not be passed. A list of courses that may not be taken is published on the homepage of the Faculty of Biology.

(3) An equivalence list for compulsory modules and their courses as well as for individual passed courses of elective modules is to be published by the Director of Studies.