

**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 from 1 October 2014**

### Curriculum for the **Bachelor's Programme in Atmospheric Sciences** at the Faculty of Geo- and Atmospheric Sciences, University of Innsbruck

#### **§ 1 Profile**

- (1) The Bachelor's Programme in Atmospheric Sciences is grouped among the natural sciences.
- (2) The Bachelor's Programme in Atmospheric Sciences is the basis to pursue career activities in this field or for a related master's programme at the University of Innsbruck and other universities. The bachelor's programme conveys basic subject-specific expertise and skills and methods for the graduates' future career opportunities. The bachelor's programme offers comprehensive insight into the aspects and processes of atmosphere, hydrosphere, cryosphere and lithosphere, with special reference to practice-oriented relevance and application of the skills and knowledge acquired.
- (3) The Bachelor's Programme in Atmospheric Sciences is closely linked with other intra- and interfaculty study programmes. In combination with the two other bachelor's programmes at the Faculty of Geo- and Atmospheric Sciences, the Bachelor's Programme in Earth Sciences and the Bachelor's Programme in Geography, five common basic modules of geo- and atmospheric sciences are imparted. In combination with the bachelor's programmes at the Faculty of Mathematics, Computer Science and Physics, four common modules convey the fundamental mathematical principles to describe the processes of atmosphere, hydrosphere, cryosphere and lithosphere.
- (4) Based on the contents of these common study programmes, students acquire a broad basic knowledge in meteorology, atmospheric physics, climate, climate change, glaciology and hydrology. Due to the location of the University of Innsbruck in the midst of the Alps, the reference to the mountain region is a major issue of the education. The programme fosters „atmospheric thinking“: Complex scientific connections in terms of space and time are based on mathematical and physical principles, and the most important processes are to be identified, elaborated and comprehended. With the bachelor's thesis, students are able to independently elaborate, document and present selected issues in the field of atmospheric sciences.
- (5) The curriculum also imparts generic interdisciplinary competences in teamwork, conflict resolution and problem-solving.
- (6) The programme introduces students to skills in formulating and presenting problem statements and their results. Special focus is given to target- and result-oriented work, ethical and socially responsible approaches, effective communication and teamwork.

The Bachelor's Programme in Atmospheric Sciences prepares students for a relevant master's programme as well as careers beyond the academic area. Occupational fields of graduates are in private and public weather forecasting, relevant economic fields (environment, energy, traffic, finance and insurance, consulting, tourism), the environmental sector and specialized engineering and planning offices. Besides, graduates can also choose occupational fields without direct reference to the subject based on the acquired intellectual and IT skills, and the ability to scientific-analytical and interdisciplinary thinking.

## § 2 Scope and duration

The Bachelor's Programme in Atmospheric Sciences covers 180 ECTS-Credits, with a duration of six semesters.

## § 3 Courses and numbers of participants

- (1) The **study orientation course (SL 'Studienorientierungslehrveranstaltung')** conveys an overview on the main contents of the study programme, and it forms the basis for the decision to choose the study programme. Maximum number of participants: 200
- (2) The **lecture (VO ,Vorlesung')** introduces students to the main areas of the subject matter and its applicable methods, with particular reference to essential facts and key doctrines in the field. In addition, lectures cover special research areas and incorporate the latest advances in scientific development. Maximum number of participants: 200
- (3) Courses using continuous assessment:
  1. **Practical course (UE ,Übung')**: Practical courses are evaluative and cover aspects of the subject in the form of practical work, case reviews, short presentations and homework discussions. They complement the lectures, with a deeper examination of the subject matter. Maximum number of participants: 25
  2. **Lecture-practical course (VU ,Vorlesung/Übung')**: The lecture-practical course is an integrated evaluative course, where lectures and practical courses are closely linked with one another. The practical course covers key issues and their solutions, in accordance with the scientific objectives of the bachelor's programme regarding professional practice. Maximum number of participants: 25
  3. **Excursion-practical course (EU ,Exkursion/Übung')**: The excursion-practical course is evaluative, and covers study topics in the field. In doing so, students will learn the appropriate methods to meet the demands of defined practical challenges and problems. Maximum number of participants: 20 (on difficult terrain: 12)
  4. **Practical training course (PR ,Praktikum')**: Practical training courses are evaluative, and develop practical problem-solving methods for scientific in the field. Maximum number of participants: 25
  5. **Introductory seminar (PS ,Proseminar')**: Introductory seminars are evaluative courses, preliminary to seminars. They convey a basic understanding of scientific criteria, introduce technical literature and methodologically analyse practical case studies in the form of presentations or project work, complemented by discussions and presentations. Maximum number of participants: 25
  6. **Seminar (SE ,Seminar')**: Seminars are evaluative courses comprised of scientific discussion. Participants must contribute in written and oral form, which will be evaluated on its technical and methodical merits, as well as the quality of presentation. The seminar is thematically linked with the bachelor's thesis (§ 8) and serves as a presentation of the treated projects in a wider subject-related context. Maximum number of participants: 15

#### § 4 Allocation of places in courses with a limited number of participants

In courses with a limited number of participants, course places are allocated as follows:

1. Students for whom the study duration would be extended due to the postponement are to be given priority.
2. If the criteria in Z 1 do not suffice, first, students for whom this course is part of a compulsory module are to be given priority, and second, students for whom this course is part of an elective module.
3. If the criteria in Z 1 and 2 do not suffice, the available places are drawn by random.

#### § 5 Compulsory and elective modules

(1) The following compulsory modules, amounting to 172.5 ECTS-Credits are to be taken:

1.	Compulsory module: Mathematics 1	h	ECTS-Credits
a.	<b>VO Introduction to Mathematics 1</b> Introduction to linear algebra and geometry; fundamentals of mathematics; systems of linear equations; elementary affine and Euclidean geometry; eigenvalue problems.	3	4.5
b.	<b>PS Introduction to Mathematics 1</b> Discussion, in-depth knowledge and practise of the optics covered in the lecture; scientific arguing and presentation of mathematical contents.	2	2.5
c.	<b>PR Introduction to Mathematics 1</b> Exercises to the contents of the lecture.	1	0.5
	<b>Total</b>	<b>6</b>	<b>7.5</b>
	<b>Objective:</b> Students can understand the way of thinking and language of mathematics in the area of linear algebra and use them to help solve issues in this area.		
	<b>Prerequisites:</b> none		

2.	Compulsory module: Mathematics 2	h	ECTS-Credits
a.	<b>VO Introduction to Mathematics 2</b> Introduction to analysis; the basic concepts of mathematics necessary for this introduction; real numbers; functions; calculus in one variable.	3	4.5
b.	<b>PS Introduction to Mathematics 2</b> Discussion, deepening and practicing the contents of the lecture; exercise in scientific reasoning and in presenting mathematical content.	2	2.5
c.	<b>PR Introduction to Mathematics 2</b> Exercises to the contents of the lecture.	1	0.5
	<b>Total</b>	<b>6</b>	<b>7.5</b>
	<b>Objective:</b> Students are able to understand the way of thinking and language of mathematics in the area of analysis and can use them to solve problems in their area.		
	<b>Prerequisites:</b> none		

3.	Compulsory module: Physics 1	h	ECTS-Credits
a.	<b>VO Introduction to Physics 1</b> The lecture introduces the fields of mechanics and thermodynamics.	4	6.5
b.	<b>UE Introduction to Physics 1</b> Discussion, consolidation and practical exercises on the contents of the lecture; exercises in scientific discussion and presentation of topics in physics.	1	1
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Objective:</b> Students can understand the ways of thinking of physics in the areas of mechanics and heating theory and can apply them to solve problems in these areas.		
	<b>Prerequisites:</b> none		

4.	Compulsory module: Introduction to Atmospheric Sciences	h	ECTS-Credits
a.	<b>VO Introduction to Atmospheric Science</b> The lecture provides an overview of the main topics in atmospheric science.	2	4
b.	<b>VO Introduction to Climatology</b> The lecture provides an overview of the main topics in climatology.	2	3.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students understand the ways of thinking in meteorology; they know the most important phenomena and processes and learn to interpret the weather and climatic events. Students get an overview of the most important contents of the study field of atmospheric sciences and its further development.		
	<b>Prerequisites:</b> none		

5.	Compulsory module: Mathematics 3	h	ECTS-Credits
a.	<b>VO Analysis 2</b> Differential and integral calculus in several variables, including topological principles in $R^n$ , curves and surfaces in $R^3$ as well as integral theorems.	4	5.5
b.	<b>PS Analysis 2</b> Discussion, specialization and practice of the contents covered in the lecture; exercises of scientific arguing.	2	2
	<b>Total</b>	<b>6</b>	<b>7.5</b>
	<b>Objective:</b> Students learn how to understand the methods of analysis in several variables and to apply them independently to problems.		
	<b>Prerequisites:</b> none		

6.	Compulsory module: Physics 2	h	ECTS-Credits
a.	<b>VO Introduction to Physics 2</b> The lecture provides an overview of the main topics in electromagnetism and optics.	4	6.5
b.	<b>UE Introduction to Physics 2</b> Discussion, specialization and practice of the contents covered in the lecture; exercises of scientific arguing and presentation of physical contents.	1	1
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Objective:</b> Students learn the ways of thinking of physics in the area of electromagnetism and of optics in order to be able to understand and independently solve problems in this area.		
	<b>Prerequisites:</b> none		

7.	Compulsory module: Introduction to Chemistry and Geophysics	h	ECTS-Credits
a.	<b>VO General and Inorganic Chemistry</b> The lecture conveys the principles of general chemistry (e.g. chemical reactions) and special inorganic chemistry focusing on earth- and environment-relevant compounds.	2	3.5
b.	<b>UE General and Inorganic Chemistry</b> Specialization of the fundamentals of general chemistry (e.g. chemical reactions) covered in the lecture as well as special inorganic chemistry focusing on earth- and environment-relevant compounds.	1	1.5
c.	<b>VO Geophysics</b> The lecture conveys the principles of geophysics.	2	2.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Prerequisites:</b> Students can understand the basics of general and inorganic chemistry and of geophysics and can apply simple chemical analytical methods.		
	<b>Prerequisites:</b> none		

8.	Compulsory module: Meteorological Instrumentation and Measurement Lab	h	ECTS-Credits
a.	<b>VO Instrumentation</b> Introduction to meteorological instruments.	2	4
b.	<b>SL Meteorological Measurements Laboratory</b> Practical work with meteorological instruments and documentation.	2	3.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students can carry out and document basic experiments in the lab and in the field. Students have an overview of the main content of the study programme and of its later development.		
	<b>Prerequisites:</b> none		

9.	Compulsory module: Atmospheric Radiation, Micrometeorology	h	ECTS-Credits
a.	<b>VO General Meteorology: Radiation</b> Understand the physics of solar and terrestrial radiation in the atmosphere; Basic Introduction - the sun - extinction - radiative transfer through the atmosphere - basics of photochemistry (UV radiation) - atmospheric optics.	2	3.5
b.	<b>UE General Meteorology: Radiation</b> Discussion, specialisation and exercises of the content presented in the lecture.	1	1
c.	<b>VO Micrometeorology</b> Know the near-surface meteorological conditions and processes determining the exchange of energy, momentum and matter between the atmosphere and different surface types and conditions.	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<b>Objective:</b> Students can understand typical processes and structures of the boundary layer and of atmospheric radiation and can identify and solve problems in these areas.		
	<b>Prerequisites:</b> successful completion of compulsory modules 4 and 8		

10.	Compulsory module: Thermodynamics	h	ECTS-Credits
a.	<b>VO Theoretical Meteorology: Thermodynamics</b> Introduction of the theoretical background, which leads to the derivation of the fundamental laws of thermodynamics and, in particular, those relevant for the understanding and modelling of the Earth's atmosphere.	3	6
b.	<b>UE Theoretical Meteorology: Thermodynamics</b> Discussion, specialisation and exercises of the content presented in the lecture.	1	1.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students can recognise connections between the condition of the atmosphere and its development as well as being able to diagnose simple relationships between them.		
	<b>Prerequisites:</b> successful completion of compulsory modules 4 and 8		

11.	Compulsory module: Weather Analysis and Forecasting 1, Scientific Methods	h	ECTS-Credits
a.	<b>VU Weather Analysis and Forecasting 1</b> Introduction of the mechanisms influencing weather at different spatial and temporal scales; conceptual models of the most important processes influencing weather.	3	5.5
b.	<b>PS Scientific Working</b> Quality criteria for scientific working, general information on preparing a Bachelor's thesis, literature work, literature survey, structure of a science thesis, writing style, tips for compiling figures, tables and equations, scientific presentations.	1	2
	<b>Total</b>	<b>4</b>	<b>7.5</b>

	<p><b>Objective:</b> Students understand the basic concepts of weather phenomena from the planetary to the synoptic scale; they can autonomously analyse weather data and explain the likely outcomes. They also understand the basic concepts of scientific research and apply these in practice. This refers to standards of good scientific practice, the use of literature and scientific instruments and recognition of relevant scientific problems.</p>
	<p><b>Prerequisites:</b> successful completion of compulsory modules 4 and 8</p>

12.	Compulsory module: Statistics, Scientific Programming	h	ECTS-Credits
a.	<p><b>VU Probability Theory and Statistics</b> The notion of probability, some discrete and continuous probability spaces, conditional probability, independence, random variables and their distributions, expectation and variance, correlation, the central limit theorem, estimation of parameters, chi-square-test.</p>	2	4
b.	<p><b>PR Programming</b> The course covers the basic syntax of a programming language and its application to meteorological problems.</p>	3	3.5
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<p><b>Objective:</b> Students are able to apply autonomously basic concepts of statistics and of a programming language on meteorological data.</p>		
	<p><b>Prerequisites:</b> successful completion of compulsory modules 4 and 8</p>		

13.	Compulsory module: Mathematical Methods	h	ECTS-Credits
a.	<p><b>VO Mathematical Methods of Physics 1</b> Ordinary differential equations, vector analysis in euclidean spaces, Fourier series and Fourier transform, probability theory.</p>	3	4.5
b.	<p><b>UE Mathematical Methods of Physics 1</b> Discussion, specialisation and exercises of the content presented in the lecture considering atmospheric sciences issues; exercises of scientific arguing and presentation of mathematical contents.</p>	2	3
	<b>Total</b>	<b>5</b>	<b>7.5</b>
	<p><b>Objective:</b> Students can apply the mathematical methods they have learnt to problems of meteorology and of physics.</p>		
	<p><b>Prerequisites:</b> successful completion of compulsory modules 1, 2 and 3</p>		

14.	Compulsory module: Dynamics of the Atmosphere	h	ECTS-Credits
a.	<b>VO Theoretical Meteorology: Dynamic</b> Basic understanding of atmospheric dynamics, conservation laws, simple applications, circulation and vorticity, Planetary Boundary Layer.	3	6
b.	<b>UE Theoretical Meteorology: Dynamic</b> Discussion, specialisation and exercises of the content presented in the lecture.	1	1.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students are able to understand the cause and effect of dynamic processes in the atmosphere and to diagnose and forecast atmospheric currents.		
	<b>Prerequisites:</b> successful completion of compulsory modules 1, 2, 3, 4, 6 and 8		

15.	Compulsory module: The Alps and Europe	h	ECTS-Credits
a.	<b>VO Tirol, Alps, Europe</b> The lecture presents and discusses the basic conditions of natural spaces as well as socio-economic structures and their interactions in different dimensions and time scales.	2	4
b.	<b>EU Field Course</b> The field course illustrates concrete examination areas and demonstrates and interprets their connections in terms of quality and quantity.	2	3.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students know the natural spatial spheres that are typical of Europe (lithosphere, hydrosphere, kryosphere, atmosphere, biosphere,) and social spatial structures and can carry out measurements in the field to analyse and evaluate them.		
	<b>Prerequisites:</b> successful completion of compulsory modules 4 and 8		

16.	Compulsory module: Geoinformatics 1	h	ECTS-Credits
	<b>VU Introduction to Geographical Information Systems (GIS)</b> The course conveys the basic principles of geographical information systems, with special attention to different data models, administration, analysis, and presentation possibilities in theory and practice.	4	7.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students have mastered the basics of geoinformatics and know the basic functions of a geographical information system.		
	<b>Prerequisites:</b> successful completion of compulsory modules 4 and 8		



17.	<b>Compulsory module: Remote Sensing</b>	<b>h</b>	<b>ECTS-Credits</b>
<b>a.</b>	<b>VO Basic Principles of Remote Sensing</b> Basic measurement principles of remote sensing; electromagnetic wave propagation; interaction of EM waves with matter, radiative transfer, satellites and sensors, methods for inversion of remote sensing measurements for sensing the atmosphere and earth surface.	2	4
<b>b.</b>	<b>UE Basic Principles of Remote Sensing</b> Elaboration of practical tasks on the topics addressed in the lecture.	1	1.5
<b>c.</b>	<b>VO Radar in Meteorology</b> The course treats information about the functionality of a weather radar, the measurement parameters and interpretation of the measurements.	1	2
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students understand the physical bases and measurement methods for remote sensing of the earth surface and atmosphere and they can measure and evaluate the corresponding measurement data.		
	<b>Prerequisites:</b> successful completion of compulsory modules 1, 2, 4, 6 and 8		

18.	<b>Compulsory module: Weather Analysis and Forecasting 2</b>	<b>h</b>	<b>ECTS-Credits</b>
<b>a.</b>	<b>VU Weather Analysis and Forecasting 2</b> The course treats automated forecasts applying statistical postprocessing to output from numerical weather prediction models; how to handle forecast uncertainty: ensemble forecasts and their verification; analysis and forecast of mesoscale weather phenomena (convection, winter precip, fog, foehn) using appropriate tools (limited area models, objective analyses, radar, satellite, webcams, traditional observing system); applying knowledge to case studies.	3	5.5
<b>b.</b>	<b>PR Daily Weather Briefing 1</b> Analysis of weather maps use of observations (classical, remote sensing, webcams) weather forecast verification of weather forecast; working in a setting similar to a weather forecasting office to prepare analysis of past weather and forecasts on time scales from nowcasting to medium range; results are presented in presentations and discussion with fellow students.	1	2
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students understand the effects and consequences of forecasting insecurity, the processes on the Mesos scale and can prepare weather forecasts and verify them with it.		
	<b>Prerequisites:</b> successful completion of compulsory modules 1, 2, 3, 4, 6, 8 and 11		

19.	Compulsory module: Solid Earth 1	h	ECTS-Credits
a.	<b>VO System Earth 1</b> The lecture gives an overview over the principles of endogenous processes of the lithosphere and the dynamic change of the Earth's surface in geological time scales; overview over the most important contents of the study: building blocks of the solid Earth, plate tectonics, cycle of rock formation, processes that modify the surface of the Earth on different time scales, formation of the Earth, evolution of life.	2	4
b.	<b>VO System Earth 2</b> The lecture gives an overview over the most important contents of the study: building blocks of the solid Earth, plate tectonics, cycle of rock formation, processes that modify the surface of the Earth on different time scales, formation of the Earth, evolution of life.	2	3.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students are oriented towards the basics of the endogenous processes of the lithosphere and of the dynamic change in the earth's surface on geological time scales and possess basic knowledge of the historical development of life.		
	<b>Prerequisites:</b> none		

20.	Compulsory module: Gases and Aerosols	h	ECTS-Credits
a.	<b>VO Atmospheric Gases and Aerosols</b> The lecture introduces properties and processes of atmospheric gases, aerosols and clouds.	3	6
b.	<b>UE Atmospheric Gases and Aerosols</b> Discussion, specialisation and exercises of the content presented in the lecture.	1	1.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students understand the meaning of gases and aerosoles for the weather and the climate and can work out task problems in this area.		
	<b>Prerequisites:</b> successful completion of compulsory modules 1, 2, 3, 4, 6, 7 and 8		

21.	Compulsory module: Climate, Glaciology, Hydrology	h	ECTS-Credits
a.	<b>VO The Climate System</b> The lecture treats the principles and basics of modelling the climate system and its components atmosphere, hydrosphere and biosphere and their interactions.	2	3.5
b.	<b>VO Glaciology and Hydrology</b> Basic principles of global hydrological cycle and the formation, distribution and physical characteristics of ice and glaciers.	2	3
c.	<b>UE Climate System, Glaciology and Hydrology</b> Specialisation and exercises of the content presented in the two lectures.	1	1
	<b>Total</b>	<b>5</b>	<b>7.5</b>

	<b>Objective:</b> Students understand the basics of the climate system and of the processes and back coupling, the function between the components and the krosphere and the hydrosphere.
	<b>Prerequisites:</b> successful completion of compulsory modules 1, 2, 3, 4, 6, 7 and 8

22.	Compulsory module: Seminar with Bachelor Thesis	h	ECTS-Credits
	<b>SE Bachelor Thesis Seminar</b> Writing and presenting the bachelor's thesis within a seminar presentation.	1	2.5 +12.5
	<b>Total</b>	<b>1</b>	<b>15</b>
	<b>Objective:</b> Students write a thesis on a topic from atmospheric sciences that meet the requirements of good scientific practice and present the results in the form of a lecture for discussion.		
	<b>Prerequisites:</b> successful completion of compulsory modules 1 to 16		

- (2) From the following elective modules, one module, amounting to 7.5 ECTS-Credits, is to be chosen and taken:

1.	Elective module: Gender Studies and People Skills	h	ECTS-Credits
a.	<b>VO Gender Research</b> Basic knowledge of gender studies including: history of the research field; key terms, ideas and research topics; awareness about gender relations in everyday life; understand the integrative function of the interdisciplinary field of gender studies especially between natural and social sciences; insights into chosen topics of gender studies in particular within geography; history of gender studies and related research fields; key fields of research and applications.	2	4
a.	<b>VO Social Skills</b> The lecture gives insights into areas of social skills, including communication techniques, conflict management, cross-cultural skills, cooperative and self-organized interventions, solidarity skills, ethical skills, mediation skills.	2	3.5
	<b>Total</b>	<b>4</b>	<b>7.5</b>
	<b>Objective:</b> Students are aware of the on-going gender aspects and in their professional practice they can work towards a more human society with equal rights for both genders.		
	<b>Prerequisites:</b> none		

2.	Elective module: Interdisciplinary Skills	h	ECTS-Credits
	Courses with a total of 7.5 ECTS-Credits can be chosen from other bachelor's programmes at the University of Innsbruck.		7.5
	<b>Total</b>		<b>7.5</b>
	<b>Objective:</b> Students have at their disposal additional competencies and skills from other scientific disciplines.		
	<b>Prerequisites:</b> the prerequisites of the respective curricula do apply.		

3.	Elective module: Internship	h	ECTS-Credits
	To try out and apply acquired knowledge and skills and practice and to orientate themselves to the conditions of professional practice and the acquisition of professionally-relevant qualifications, students are able to complete a subject-relevant placement in institutions outside the university like state and private weather services, provincial institutions and insurance firms, research institutions, etc. amounting to 180 hours, or rather 7.5 ECTS-Credits. The placement can take place during the teaching-free period. A certificate is to be presented by the institution stating the duration, extent and content of the task completed and a report is to be written thereon. Before beginning the placement, approval of it is to be obtained from the Director of Studies.		7.5
	<b>Total</b>		<b>7.5</b>
	<b>Objective:</b> Students can apply their acquired knowledge in their daily professional lives.		
	<b>Prerequisites:</b> successful completion of compulsory modules 4, 8, 9 and 11		

## § 6 Studies Induction and Orientation Stage

- (1) The Studies Induction and Orientation Stage covers one semester (30 ECTS-Credits) and offers students an overview of the main contents of the degree programme and its structure in order to provide a factual basis to assess the decision to pursue the chosen field.
- (2) The Studies Induction and Orientation Stage requires the following course examinations, which may be repeated twice, to be completed successfully:
  1. VO Introduction to Atmospheric Science (compulsory module 4 lit. a / 2 h / 4 ECTS-Credits)
  2. VO Introduction to Atmospheric Sciences (compulsory module 4 lit. b / 2 h / 3.5 ECTS-Credits)
- (3) Passing the examinations specified in paragraph 2 permits students to attend all further courses and take all examinations following the Studies Induction and Orientation Stage and to write a bachelor's thesis as described in the curriculum. Registration requirements specified by the curriculum are to be followed.

## **§ 7 Bachelor's Thesis**

- (1) A bachelor's thesis, amounting to 12.5 ECTS-Credits, is to be completed and presented within the context of the compulsory module 22.
- (2) The bachelor's thesis is to be submitted in paper form and in digital version as determined by the Director of Studies.

## **§ 8 Examination Regulations**

- (1) A module is completed when all of its courses have been successfully completed.
- (2) Course examinations are:
  1. Examinations which assess the knowledge and skills acquired in an individual course and which comprise a single examination held at the end of the course. The method of testing is to be defined and announced by the instructor before the start of the course.
  2. Evaluation in continuous assessment courses („immanent examination“) is based on written, oral and/or practical contributions within the context of the course. The methods of evaluation are to be defined by the instructor before the start of the course.
- (3) Evaluation of the elective module ‚Internship‘ is defined by the Director of Studies based on a certificate being presented by the institution stating the duration, extent and content of the task completed and a report of the student. Positive completion is to be defined by „mit Erfolg teilgenommen“ (successfully completed), negative completion is to be defined by „ohne Erfolg teilgenommen“ (not successfully completed).

## **§ 9 Academic Degree**

Graduates of the Bachelor's Programme in Atmospheric Sciences are awarded the academic degree „Bachelor of Science“, abbreviated „BSc“.

## **§ 10 Validity and Effect**

- (1) The curriculum is effective as of 1 October 2010.
- (2) §§ 5 and 11 in the version published in the University of Innsbruck Bulletin of 8 June 2011, Issue 26, No 464 is effective as of 1 October 2011 and applies to all students.
- (3) § 6 in the version published in the University of Innsbruck Bulletin of 8 June 2011, Issue 26, No 464 is effective as of 1 October 2011 and applies to all students beginning their degree programme as of winter semester 2011/2012.
- (4) § 6 in the version published in the University of Innsbruck Bulletin of 8 June 2011, Issue 26, No 464 ceases to be effective at the end of 30 September 2014.
- (5) § 10 para. 4 ceases to be effective after 30 September 2014.
- (6) § 6, as announced in the University of Innsbruck Bulletin of 8 June 2011, Issue 26, No. 464, ceases to be effective after 31 December 2015.

## Appendix 1:

### Recognition of examinations

The course examinations successfully completed and required by the curriculum for the Bachelor's Programme in Geo- and Atmospheric Sciences at the University of Innsbruck (in the version published in the University of Innsbruck Bulletin of 27 April 2007) are considered equivalent according to § 78 Para 1 UniStG 2002 to the Bachelor's Programme in Atmospheric Sciences at the University of Innsbruck as follows:

<b>Successfully completed examinations</b>			<b>Recognition as:</b>		
<b>Bachelor's Programme in Geo- and Atmospheric Sciences, curriculum of 27 April 2007</b>	ECTS-Credits	h	<b>Bachelor's Programme in Atmospheric Sciences, curriculum 2010</b>	ECTS-Credits	h
<b>Module 2: Introduction to Mathematics</b>	<b>7.5</b>		<b>Compulsory module 1: Mathematics 1</b>	<b>7.5</b>	
<b>Module 4: Solid Earth</b>	<b>7.5</b>		<b>Compulsory module 19: Solid Earth 1</b>	<b>7.5</b>	
<b>Module 5: Atmospheric Sciences (1)</b>			<b>Compulsory module 4: Introduction to Atmospheric Sciences</b>		
Introduction to Meteorology 1	4.0	VO 2	Introduction to Atmospheric Sciences	7.5	VO 4
Climatology / Hydrology / Glaciology	3.5	VO 2			
<b>Module 7: The Alps and Europe</b>			<b>Compulsory module 15: The Alps and Europe</b>		
Tirol, Alps, Europe	4.0	VO 2	Tirol, Alps, Europe	4.0	VO 2
Field Course	3.5	UE2	Field Course	3.5	UE 2
<b>Module 24: Physics (1)</b>	<b>7.5</b>		<b>Compulsory module 3: Physics 1</b>	<b>7.5</b>	
<b>Module 41: Mathematics (2)</b>	<b>7.5</b>		<b>Compulsory module 2: Mathematics 2</b>	<b>7.5</b>	
<b>Module 42: Physics (2)</b>	<b>7.5</b>		<b>Compulsory module 6: Physics 2</b>	<b>7.5</b>	
<b>Module 28: Chemistry and Geophysics</b>			<b>Compulsory module 7: Introduction to Chemistry and Geophysics</b>		
General and Inorganic Chemistry	3.5	VO 2	General and Inorganic Chemistry	3.5	VO 2
General and Inorganic Chemistry	1.5	UE1	General and Inorganic Chemistry	1.5	UE 1
Geophysics	2.5	VO 2	Geophysics	2.5	VO 2

<b>Module 44: Theoretical Meteorology (1)</b>			<b>Compulsory module 10: Thermodynamics</b>		
Theoretical Meteorology 1	4.5	VO 3	Theoretical Meteorology: Thermodynamics	6.0	VO 3
Exercise Course on Theoretical Meteorology 1	3.0	UE1	Theoretical Meteorology: Thermodynamics	1.5	UE 1
<b>Module 46: Climate and Cyosphere</b>			<b>Compulsory module 21: Climate, Glaciology, Hydrology</b>		
The Climate System	4.0	VO 2	The Climate System	3.5	VO 2
Glaciology	3.5	VO 2	Glaciology and Hydrology and	3.0	VO 2
			Climate System, Glaciology and Hydrology	1.0	UE 1
<b>Module 49: Remote Sensing</b>			<b>Compulsory module 17: Remote Sensing</b>		
Basic Principles of Remote Sensing	4.0	VO 2	Basic Principles of Remote Sensing	4.0	VO 2
Exercise Course on Principles of Remote Sensing.	1.5	UE1	Basic Principles of Remote Sensing	1.5	UE 1
Radar in Meteorology	2.0	VU 1	Radar in Meteorology	2.0	VO 1
<b>Module 11: Geoinformatics</b>	<b>7.5</b>		<b>Compulsory module 16: Geoinformatics 1</b>	<b>7.5</b>	
<b>Module 51: Seminar with Bachelor Thesis</b>	<b>15.0</b>		<b>Compulsory module 22: Seminar with Bachelor Thesis</b>	<b>15.0</b>	
<b>Transfer according to courses</b>					
Fundamentals of Statistics (Module 6)	4.0	VO 2	Probability Theory and Statistics (Module 12)	4.0	VU 2
Instrumentation (Module 40)	3.5	VO 2	Instrumentation (Module 8)	4.0	VO 2
Weather Analysis and Forecasting 1 (Module 47)	4.0	VU 2	Weather Analysis and Forecasting 1 (Module 11)	5.5	VU 3
General Meteorology 1 (Module 47)	3.5	VO 2	General Meteorology: Radiation (Module 9) and	3.5	VO 2
			General Meteorology: Radiation (Module 9)	1.0	UE 1
Theoretical Meteorology 2 (Module 48)	3.5	VO 2	Theoretical Meteorology: Dynamic (Module 14)	6.0	VO 3
Exercise Course on Theoretical Meteorology 2 (Module 48)	2.0	UE1	Theoretical Meteorology: Dynamic (Module 14)	1.5	UE 1

Daily Weather Briefing 1 (Module 48)	2.0	PR1	Daily Weather Briefing 1 (Module 18)	2.0	PR 1
Weather Analysis and Forecasting 2 (Module 50)	4.0	VU 2	Weather Analysis and Forecasting 2 (Module 18)	5.5	VU 3
General Meteorology 2 (Module 50)	3.5	VO 2	General Meteorology: Atmospheric Gases and Aerosols (Module 20) and	6.0	VO 3
			General Meteorology: Atmospheric Gases and Aerosols (Module 20)	1.5	UE 1
Meteorological Measurements Laboratory (Module 43)	4.0	PR2	Meteorological Instrumentation and Measurement Lab (Module 8)	3.5	SL2
Digital Data Processing (Module 43)	3.5	VO 2	Programming 1 (Module 12)	3.5	PR3
Introduction to Meteorology 2 (Module 40)	4.0	VO 2	Micrometeorology (Module 9)	3.0	VO 2

## Appendix 2:

The course examinations by the curriculum for the Bachelor's Programme in Atmospheric Sciences (in the version published in the University of Innsbruck Bulletin of 21 June 2010, Issue 30, No 315) are considered equivalent to the course examinations by the curriculum (in the version published in the University of Innsbruck Bulletin of 8 June 2011, Issue 26, No 464) as follows:

Course examination	equivalent to	course examination
VO Introduction to Atmospheric Science and Climatology (4 h / 7.5 ECTS-Credits)		VO Introduction to Atmospheric Science (2 h / 4 ECTS-Credits) and VO Introduction to Climatology (2 h / 3.5 ECTS-Credits)
VO System Earth (4 h / 7.5 ECTS-Credits)		VO System Earth 1 (2 h / 4 ECTS-Credits) and VO System Earth 2 (2 h / 3.5 ECTS-Credits)