

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).

Original version published in the University of Innsbruck Bulletin of 13 November 2008, Issue 9, No. 66

Modification published in the University of Innsbruck Bulletin of 4 February 2015, Issue 13, No. 167

Complete Version as of 1 October 2015

Curriculum for the **Doctor of Philosophy Programme Pharmaceutical Sciences** at the Faculty of Chemistry and Pharmacy of the University of Innsbruck

§ 1 Qualification profile and programme objectives

- (1) The Doctor of Philosophy Programme Pharmaceutical Sciences at the Faculty of Chemistry and Pharmacy of the University of Innsbruck belongs to the group of studies in the natural sciences.
- (2) Graduates of the Doctor of Philosophy Programme Pharmaceutical Sciences have a systematic understanding of their research discipline and the methods employed by research in this field. Through their submission of an original piece of scientific work, graduates of this programme have made their own contribution to research which widens boundaries of knowledge and conforms to the evaluation standards of international experts. The quality and international orientation of the studies promote the graduates' mobility and direct their perception beyond the boundaries of their special field. The key qualifications acquired empower them to adapt their expertise to fast- changing requirements.
- (3) The Doctor of Philosophy Programme Pharmaceutical Sciences at the University of Innsbruck serves to educate and train junior scientists in the pharmaceutical sciences. The following aspects are given special consideration: current processes of developing and characterizing drugs as well as active ingredients and their therapeutic application, their effects on important physiological and pathophysiological processes in mammal or other model organisms, and the identification of new disease-relevant signaling processes and modern methods of developing drugs.
- (4) Graduates of this doctoral programme are able to independently work on and present issues of the natural sciences on a very high level of subject-related and methodical expertise. Additionally, students acquire the general scientific and communicative competences required from successful professional scientists in leading positions in an academic, industrial or public environment.

In particular, this includes the following fields of knowledge and skills:

Knowledge and understanding:

- in-depth knowledge of the natural sciences relevant for successful work on the dissertation, especially in the core areas of the pharmaceutical sciences as well as molecular biosciences, and of the most important current strategies and methods for modern drug development;

- detailed knowledge of the scientific disciplines relevant for successful work on the dissertation, especially in the core areas of the pharmaceutical sciences, molecular biosciences and medical sciences, and of the current literature relevant for the dissertation project

Practical skills:

- competence to plan, execute, and interpret natural science experiments by means of important methods employed in the pharmaceutical sciences or molecular biosciences in order to work on the dissertation topic; moreover, the ability to consolidate and expand one's practical experience in order to create experimental core competences;
- competence to acquire and critically interpret scientific literature and other information, including the use of data bases relevant for the subject field;

Communicative skills:

In particular, graduates are able to present scientific results independently and to analyze and critically discuss their own research results and those of others, as well as concepts and experiments with colleagues, laypeople, and a scientifically competent audience.

Competences for careers in science:

- especially, understanding the career profile of independent scientists in academic and industrial environments;
- understanding quality controls in laboratories and international quality standards (e.g. good scientific practice);
- knowledge of statistics for collecting and analyzing scientific data;
- competence to write scientific publications;
- competence to compile applications for research funding and knowledge of the pertinent national and international research funding organizations;
- understanding ethically relevant issues (e.g. methods of data collection, plagiarism, co- authorship, animal experiments, clinical studies) in scientific practice and knowledge of the pertinent basic standards and problem solutions;

§ 2 Length and scope

The Doctor of Philosophy Programme Pharmaceutical Sciences takes three years (six semesters), which equals 180 ECTS credits.

§ 3 Admission

- (1) Valid proof of the necessary academic level for admission to the doctoral programme must be provided. This includes proof of completion of relevant diploma or master programmes, of completion of relevant diploma or master programmes at a university of applied science or completion of other equivalent studies at an accredited Austrian or non-Austrian post-secondary educational institution. 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 doctoral programme.

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

Seminars (SE) provide in-depth treatment of scientific topics through students' presentations and discussion thereof. Maximum number of participants: 12

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

Students whose study time will be prolonged if they are not admitted are to be given priority.

§ 6 Modules

- (1) Modules and courses offered in the doctoral programme are organized in one or more thematic focus areas (programmes). The thematic focus area chosen by the student has to be defined in the dissertation agreement.
- (2) Thematic focus areas (programmes) are:
 - a) Biomolecules and Drug Development
 - b) Doctoral programmes that are subsidized by acknowledged national or international research funding institutions and where the main supervisor acts as project leader can become additional thematic focus areas (programmes).
- (3) The following modules – equal to 30 ECTS-Credits – are compulsory:

1.	Compulsory Module: Scientific Fundamentals and Core Skills	h	ECTS-Credits
	Courses corresponding to 6 ECTS-Credits as specified in the dissertation agreement must be passed in Scientific Fundamentals and Core Skills on the dissertation topic. It is recommended to take a course from the fields of “Statistics” and “Writing Scientific Papers”.	-	6
	Total	-	6
	Objective: After the successful completion of this module, students command advanced theoretical and practical knowledge, skills, and competences in terms of those scientific disciplines, experimental methods, and selected soft skills that are necessary for working on the dissertation and provide an introduction to the current state of knowledge and current developments of the respective subject area. This includes competences in quality assurance.		
	Prerequisites: none		

2.	Compulsory Module: Analysis and Critical Evaluation of Own Research Results as well as Progress Reports	h	ECTS-Credits
a.	SE Analysis of Own Research Results I	1	1
b.	SE Analysis of Own Research Results II	1	1
c.	SE Analysis of Own Research Results III	1	1
d.	SE Analysis of Own Research Results IV	1	1
e.	SE Analysis of Own Research Results V	1	1
f.	SE Analysis of Own Research Results VI	1	1
	Total	6	6

	<p>Objective: After the successful completion of this module, students are able to analyze and interpret the data they have collected in the dissertation area according to the state of the art in the field; they also understand the resulting concept of their own research strategies. Students are able to document and analyze scientific data according to pertinent quality standards and to implement quality regulations. They are furthermore able to make regular progress reports to present their research results in accordance to high scientific standards.</p>
	<p>Prerequisites: none</p>

3.	Compulsory Module: Discussion of Current Research Results	h	ECTS-Credits
a.	SE Discussion of Current Research Results I	1	1
b.	SE Discussion of Current Research Results II	1	1
c.	SE Discussion of Current Research Results III	1	1
d.	SE Discussion of Current Research Results IV	1	1
e.	SE Discussion of Current Research Results V	1	1
f.	SE Discussion of Current Research Results VI	1	1
	Total	6	6
	<p>Objective: After the successful completion of this module, students can actively reflect on the current state of knowledge in the area of dissertation topic and relevant related science disciplines; they are able to reflect on and discuss issues with experts.</p>		
	<p>Prerequisites: none</p>		

4.	Compulsory Module: Presentation of Own Research Results	h	ECTS-Credits
	Presentation of the student's own research results at national and international conferences and/or in projects and/or in competitions.	-	2
	Total	-	2
	<p>Objective: After completion of this module, students are able to present research results in national or international fora, to analyze and critically assess their own research performance and that of others, and to recognize the strengths and weaknesses of their own research. Students acquire didactic skills which enable them to clearly present their research results to laypeople and experts alike and to explain complicated correlations in a clearly understandable manner.</p>		
	<p>Prerequisites: none</p>		

5.	Compulsory Module: Generic Skills	h	ECTS-Credits
	Courses, as defined in the dissertation agreement, equal to 5 ECTS-Credits have to be completed. It is recommended to choose a course from the field of "Equality and Gender". Additionally, courses are offered which provide didactic skills and competences for subsequent knowledge transfer of the field. Suitable options are marked in the course catalog.	-	5
	Total	-	5

	<p>Objective: After the successful completion of this module, students command advanced theoretical and practical knowledge, as well as skills and competences in selected disciplines which put them in a position to pursue independent scientific work and help them succeed in their future careers.</p>
	<p>Prerequisites: none</p>

6.	Compulsory Module: Doctoral Thesis Defense (Rigorosum)	h	ECTS-Credits
	Final oral dissertation defense before an examination board	-	5
	Total	-	5
	<p>Objective: Presentation, reflection on, and analysis of the dissertation results in the overall context of the doctoral programme; the focus is on summarizing and explaining results of the research project, on presenting the increase in knowledge for the discipline as well as their importance for society, on demonstrating evaluation and method competences, as well as on presenting results.</p>		
	<p>Prerequisites: positive completion of all other modules and positive evaluation of the dissertation.</p>		

§ 7 Dissertation

- (1) In the course of the doctoral programme, a dissertation has to be written, which equals 150 ECTS credits. The dissertation is a piece of scientific work which serves to prove the student's ability to cope with scientific questions in an independent way.
- (2) The dissertation topic has to be chosen from the field of the pharmaceutical sciences or must be related to these scientific areas.
- (3) The dissertation may be submitted as a monograph or may consist of thematically and/or methodically related articles. In this case, a minimum of three publications in international scientific journals must be submitted, and the student must be the first author of at least one of them. Two of these must have been accepted for publication and at least one more must have been submitted for publication or must have been accepted for presentation by an acknowledged scientific conference. Additionally, the student has to write an extensive summary of the subject area, the methods employed, and the results he/she has obtained; in doing so, the student must refer to the finished manuscripts included in the dissertation. Furthermore, the student has to summarize and reflect on the work with reference to the current state of research in the area of the dissertation. Moreover, a preview has to be given of the further scientific and methodical development of the elaborated topic.
- (4) The student has to propose a team of supervisors, consisting of at least two people (dissertation committee). One of the supervisors (holder of a "Venia docendi", a university teaching authorization) is named as responsible main supervisor. It is permissible to propose supervisors (with the exception of the main supervisor) from subject-related fields. In justifiable exceptional cases it is possible for students to propose only one supervisor.
- (5) Prior to beginning the work, the student has to communicate the dissertation topic and supervisors in writing to the Director of Studies. Topic and supervisors are considered as accepted, if the Director of Studies does not veto them by means of a decree within one month after the receipt of the proposal.

§ 8 Examination regulations

- (1) The evaluation of all modules – except for Modules 4 and 6 – is based on course examinations.
- (2) Lectures are evaluated by means of a written or oral exam about the course content. The lecturer will communicate evaluation methods before the course starts.
- (3) The evaluation of courses with continuous performance assessment is based on the student's regular, written and/or oral and/or practical/experimental contributions. The lecturer is required to communicate evaluation methods and criteria before the course starts. For each course of Module 3, a performance report has to be submitted. The performance report needs to include a list with proof of completed achievements.
- (4) Module 4 is evaluated by the main supervisor on the basis of a performance report to be written by the student.
- (5) The evaluation of the Module 6 "Doctoral Thesis Defense" is based on an oral board exam before an examination board consisting of at least three examiners.

§ 9 Academic degree

Graduates of the Doctor of Philosophy Programme Pharmaceutical Sciences are awarded the academic degree of "Doctor of Philosophy", abbreviated as "PhD“.

§ 10 Coming into force

- (1) This curriculum comes into force on 1 March 2009.
- (2) The modification of the curriculum in the version of the University of Innsbruck Bulletin of 4 February 2015, Issue 13, No. 167 comes into force on 1 October 2015 and is to be applied to all students.

Equivalence List – Doctoral Programme Pharmaceutical Sciences

- (1) Positively assessed exams, taken as part of the Doctoral Programme Pharmaceutical Sciences at the University of Innsbruck (curriculum published in the version of the University of Innsbruck Bulletin from 13 November 2008, Issue 9, No 66) will be recognised as equal towards the exams of the curriculum published in the version of the University of Innsbruck Bulletin from 4 February 2015, Issue 13, No 167 as follows:

Curriculum published in the version of the University of Innsbruck Bulletin from 13 November 2008, Issue 9, No 66		Curriculum published in the version of the University of Innsbruck Bulletin from 4 February 2015, Issue 13, No 167	
§6.1	Module: Scientific Core Skills (10 ECTS- Credits)	§6.1	Module: Scientific Basics and Core Skills (6 ECTS- Credits)
§6.2	Module: Analysis and Critical Exploitation of Own Research Results (12,5 ECTS- Credits)	§6.2	Module: Analysis and Critical Exploitation of Own Research Results as well as Progress Reports (6 ECTS- Credits)
§6.3	Module: Discussion of Current Research Results (12,5 ECTS- Credits)	§6.3	Module: Discussion of Current Research Results (6 ECTS- Credits)
§6.4	Module: Presentation of Own Research Results (15 ECTS- Credits)	§6.4	Module: Presentation of Own Research Results (2 ECTS- Credits)
§6.5	Module: Generic Scientific Skills (5 ECTS- Credits)	§6.5	Module: Generic Skills (5 ECTS- Credits)
§6.6	Module: Doctoral Thesis Defense (5 ECTS-Credits)	§6.6	Module: Doctoral Thesis Defense (5 ECTS-Credits)

- (2) Individual cases, where this regulation does not apply, will be decided in order that no disadvantage shall arise for the student due to the modification.