The English version of the curriculum for the „Doctor of Philosophy programme Pharmaceutical Sciences“ is not legally binding and is for informational purposes only. The legal basis is regulated in the curriculum published in the University of Innsbruck Bulletin on 13 November 2008, issue 9, No. 66.

Decision of the Curriculum Committee of the Faculty of Chemistry and Pharmacy on 16 October 2008, approved by Senate Decree on 6 November 2008:

On the basis of § 25 para. 1 no. 10 University Organisation Act 2002, BGBl. I (Federal Law Gazette) No. 120, most recently amended by Federal Law BGBl. I (Federal Law Gazette) No. 87/2007 and § 32 Section "Regulations of Study Law", republished in the University of Innsbruck Bulletin of 3 February 2006, Issue 16, No. 90, most recently amended by the University of Innsbruck Bulletin of 7 May 2008, Issue 42, No. 272, the following is decreed:

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 program 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 und 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 den 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 organization;
- 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 Magister 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

(1) **Lectures** (VO) are courses where lecturers present subject manner, as a rule without student participation.

(2) **Tutorials** (UE) are courses with continuous performance assessment where subject matter is conveyed through practical exercises during class. Maximum number of participants: 6

(3) **Lectures with integrated practical parts** (VU) are courses with continuous performance assessment combining the two course types above. Maximum number of participants: 6

(4) **Seminars** (SE) are courses with continuous performance assessment where content is conveyed through guided self-study programmes. 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) Suitable courses of the thematic focus areas are marked in the course catalog.

(3) Thematic focus areas (programmes) are:

a Biomolecules and drug development

b Doctoral programmes can develop into additional thematic focus areas (programmes) which are subsidized by acknowledged national or international research funding institutions and where the main supervisor acts as project leader.

(4) The following modules – equal to 60 ECTS credits – are mandatory:

1	**Module: Scientific Core Skills**	**Sem. hours**	**ECTS credits**
a	VO Current Aspects of Drug Development I	1	1
b	VO Current Aspects of Drug Development II	1	1
c	SE Pharmaceutical Core Subjects I	1	1
d	SE Pharmaceutical Core Subjects II	1	1
e	UE Pharmaceutical Core Subjects I	1	1
f	UE Pharmaceutical Core Subjects II	1	1
g	SE Quality Assurance and Quality Control, Ethics in Science, Plagiarism	1	1
h	VO Statistics	1	1
i	VU Scientific Writing	1	1
	Total	9	10

	Learning objectives of the module: 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.
	Admission requirements: none

2	**Module: Analysis and Critical Exploitation of Own Research Results**	**Sem. hours**	**ECTS credits**
a	SE Analysis of the Student's Research Results I	1	2.5
b	SE Analysis of the Student's Research Results II	1	2
c	SE Analysis of the Student's Research Results III	1	2
d	SE Analysis of the Student's Research Results IV	1	2
e	SE Analysis of the Student's Research Results V	1	2
f	SE Analysis of the Student's Research Results VI	1	2
	Total	6	12.5
	Learning objectives of the module: 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.		
	Admission requirements: none		

3	**Module: Discussion of Current Research Results**	**Sem. hours**	**ECTS credits**
a	SE Discussion of Current Research Results I	1	2.5
b	SE Discussion of Current Research Results II	1	2
c	SE Discussion of Current Research Results III	1	2
d	SE Discussion of Current Research Results IV	1	2
e	SE Discussion of Current Research Results V	1	2
f	SE Discussion of Current Research Results VI	1	2
	Total	6	12.5
	Learning objectives of the module: 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.		
	Admission requirements: none		

4	**Module: Presentation of Own Research Results**	**Sem. hours**	**ECTS credits**
	Presentation of the student's own research results in progress reports and/or at national and international conferences and/or in projects and/or in competitions.	-	15
	Total	-	15
	Learning objectives of the module: After completion of this module, students are able to present research results in national or international forums, 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.		
	Admission requirements: none		

5	**Module: Generic Scientific Skills**	**Sem. hours**	**ECTS credits**
	Courses, as defined in the dissertation agreement, equal to 5 ECTS credits have to be completed. One course has to be chosen 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
	Learning objectives of the module: 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.		
	Admission requirements: none		

6	**Module: Doctoral Thesis Defense**	**Sem. hours**	**ECTS credits**
	Final oral dissertation defense before an examination board	-	5
	Total	-	5
	Learning objectives of the module: 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, on demonstrating evaluation and method competences, as well as on presenting results.		
	Admission requirements: positive completion of all other modules and positive evaluation of the dissertation		

§ 7 Dissertation

(1) In the course of the doctoral programme, a dissertation has to be written, which equals 120 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 can also consist of articles that are related in terms of subject matter or methods. 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), and to nominate one of them as the supervisor mainly responsible. 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" or "PhD“, in brief.

§ 10 Implementation

This curriculum comes into force on 1 March 2009.

For the Curriculum Committee:
Ao. Univ.-Prof. Dr. Benno Bildstein

For the Senate:
Univ.-Prof. Dr. Ivo Hajnal