

Curriculum for the Abraham Wald PhD program in Statistics and Operations Research

§1 Qualifications profile and educational aims

The aim of the Abraham Wald PhD program is the acquisition of competences to enable the student to do academic research work in a sub-area of statistics or operations research (in each case including financial and insurance mathematics).

Competent advice and corresponding qualification requirements as well as a carefully thought out range of challenging courses should ensure that the students are capable, under appropriate supervision, of writing a dissertation of high quality in international comparison. Thus, within the framework of the dissertation, publications should usually appear in internationally renowned journals (SCI expanded, or category A of the faculty). The graduates should accordingly be able to find academic positions at respected universities both in Austria and abroad.

§2 Classification, coordination and admission

(1) The Abraham Wald PhD program in statistics and operations research offers the framework for dissertations in the field of statistics and operations research as part of the PhD program for business, economics and statistics at the University of Vienna. Thus, the program is subject to the provisions which are set out in the PhD curriculum of the Faculty of Business, Economics and Statistics at the University of Vienna.

(2) Staff qualified as professors at the Institute for Statistics and Decision Support Systems (ISDS) select by majority vote a coordinator for the Abraham Wald program out of their own ranks in each case for a term of two years. This person acts as contact person for students and as an expert primary informant for the doctoral advisory board responsible for the dissertation field of statistics and operations research in the following matters

- (a) Admission
- (b) Recognition of credits for courses
- (c) Selection of examiners
- (d) Assignment of supervisors
- (e) Approbation of the topic
- (f) Selection of the reviewers

(3) Admission to the PhD program shall be according to §2 of the PhD curriculum of the Faculty of Business, Economics and Statistics at the University of Vienna.

Prerequisite for admission to the AW PhD program is the completion of the Magister (masters) degree program in statistics at the University of Vienna. Admission is also possible on the basis of a completed degree from a recognised Austrian or foreign post-secondary educational institution, which is equivalent to the Magister (masters) program in statistics at the University of Vienna, and pursuant to § 5 para. 3 FHStG (Fachhochschule Studies Act) on the basis of a completed, equivalent degree from a University of Applied Sciences. Equally, graduates of other

university diploma and masters programs can be admitted, provided they have the technical competence necessary for the completion of the AW PhD program.

Insofar as this is not in conflict with any compelling legal provisions, admission to the program can be rendered subject to appropriate examinations for up to 30 ECTS, in order to ensure that the students have the necessary prior knowledge.

§3 Structure of the program

- (1) The program takes six semesters to complete. It encompasses a total of 180 ECTS.
- (2) During the program, lectures or courses comprising 12 semester hours (48 ECTS) must be completed and attested by official transcripts. It is recommended that students attend these courses in the first two semesters.
- (3) Furthermore, seminars for doctoral students comprising 8 semester hours (32 ECTS) must be completed. It is recommended that students attend these seminars in the third to the sixth semester. Doctoral student seminars that are offered in different semesters also count as different courses even when they have the same course title and the same course number.
- (4) Participation in the ISDS colloquium (2 semester hours, 4 ECTS), which is where faculty-wide presentations take place (see PhD curriculum § 4 (2)), is compulsory. The colloquium will be counted (after consultation with the supervisors) optionally either as a course under (2) or (3) above.
- (5) Within one year of admission to the program, the student must submit an application for approval of a dissertation project (cf. PhD curriculum §3 (2c) and § 4).
- (6) In the case of the AW PhD program, the dissertation contract will always include the courses and guidelines stipulated herein.
- (7) Moreover, a dissertation must be written and defended. The dissertation is allocated 96 ECTS and the defence of such a further 4 ECTS.

§ 4. Courses

- (1) The ISDS offers courses (usually university courses) comprising respectively 2, 3 or 4 semester hours (respectively 8, 12 or 16 ECTS) from the following fields:
 1. Advanced Theoretical Statistics
 2. Advanced Applied Statistics and Data Analysis
 3. Advanced Stochastic Processes and Models
 4. Advanced Optimization

The student can choose the courses which have to be completed under § 3 para. (2) freely out of these courses, provided courses from at least two different fields are represented in such selection.

(2) The doctoral advisory board for the dissertation field statistics and operations research and/or the coordinator for the Abraham Wald program mentioned above in §2 (2) can also recommend to the responsible academic authority (e.g. Studienpräses or Director of the Studies Programme) that other advanced courses at the Faculty of Business, Economics and Statistics, or of the University of Vienna or of other partner universities can be approved for all students of the doctoral program, if the contents and level of such courses is suitable for the AW PhD program. This is of particular relevance if the range of courses on offer in the department of statistics is insufficient.

(3) The students must choose courses comprising at least 36 ECTS from those named in paragraph (1) or equivalent courses.

(4) The responsible academic authority (e.g. Studienpräses or Director of the Studies Programme) shall decide on the substitution of courses from paragraph (1) by others associated with the dissertation on a case-by-case basis. In this case, however, it must be ensured that courses comprising at least 24 ECTS are chosen from those named in para. (1) or equivalents. If the student has already received consent from someone to act as a supervisor for the dissertation, the consent of such supervisor must be obtained in advance.

(5) The doctoral students' seminars pursuant to § 3 para. (3) must be completed in consultation with the supervisor(s) of the dissertation.

(6) The courses will be held in English. The dissertation must be written in English.

§5 Examinations, dissertation and defensio

The provisions of the statutes of the University of Vienna apply.

(1) The dissertation must be written in the field of statistics or operations research (in each case including financial and insurance mathematics).

(2) An official transcript of final examinations results will be issued for the examinations which must be completed and this will contain two marks (grades).

(2a) The first part of the final examination comprises the successful completion of the courses cited under §3 (2), (3) and (4).

(2b) The second part of the final examination is the defence of the dissertation (defensio dissertationis). The dissertation can only be defended after the first part of the examination under para. (1) has been passed and the dissertation has been approbated. It takes place before an examination committee consisting of three examiners, whereby one of these shall act as chair. The examiners shall be appointed by the responsible academic authority (e.g. Studienpräses or Director of the Studies Programme). The defensio is in public and contains a short presentation by the candidate on the contents of the dissertation and then the discussion of questions from the members of the examination committee and the representatives of the study field also present. It is conducted in English.

§ 6 Examination committee for the defensio, marking.

The provisions of the statutes of the University of Vienna shall apply.

(1) As a rule, the examination committee for the defence of the dissertation consists of the two reviewers and a further examiner to be appointed by the responsible academic authority (e.g. Studienpräses or Director of the Studies Programme). If three reviewers have been nominated, then these three persons are usually also the examination committee. The responsible academic authority nominates a member of the examination committee as chair. This member presides over the defensio and the subsequent marking. The marking is not public.

(2) If a reviewer is unable to come and take part in the defensio, the responsible academic authority (e.g. Studienpräses or Director of the Studies Programme) can accordingly nominate another examiner instead.

§ 7. Completion of the AW PhD program

(1) The provisions set out in the PhD curriculum of the Faculty of Business, Economics and Statistics at the University of Vienna apply for the completion of the PhD program in the dissertation field statistics and operations research.

(2) Once the student has obtained positive marks in all courses and examinations pursuant to §3 (2-4), for the dissertation and for the defensio dissertationis, an official transcript recording the completion of the Abraham Wald PhD program will be issued to the student.