

37. Amendment of the Curriculum for the Doctoral Programme in Applied Medical Science (N790)

Objectives¹

§ 1. The doctoral programme in applied medical science at the Medical University of Vienna serves to further develop the ability for independent scientific work in medical and medicine-associated professions. It is designed to cultivate and enhance the University's performance in applied research through the symbiosis of research and practice. Furthermore, it aims to equip students with critical, analytical and argumentative skills.

The doctoral programme in applied medical science is intended for interested young researchers as well as practitioners who want to relate research to biomedical and clinical practice development and use science in the profession. Under guidance, dissertation students become highly qualified practitioners who want to explore and develop their own professional practice. The training and promotion of young scientists with a scientific attitude is carried out in accordance with the guidelines of the Medical University of Vienna (GOOD SCIENTIFIC PRACTICE - Ethics in Science and Research, Guidelines of the Medical University of Vienna).

With more than 21% of the total study duration, the emphasis is on guided teaching, which is an integral and key part of the programme to provide practice-oriented skills in the respective medical faculty. The research part is equivalent to the PhD and should result in an original dissertation with accompanying publications in reputable journals. Particular attention is to be placed on the interdisciplinary character of the subject matter. Thus, the doctorate in applied medical science serves the dissemination, development and management of professional medical practice.

After completion of the dissertation, the doctoral candidates have to meet the following profile for the practice of science in the profession. This provides the qualification to work in a specific field of medicine:

- a. Seeking for the application of knowledge, as opposed to basic science oriented PhD doctoral students,
- b. Cultivation of progress in theoretical and practical qualifications at a high standard,
- c. Knowledge of a range of biomedical methods and their application in medical research and practice,
- d. ongoing improvement of their practice through research,
- e. Effectiveness as professional practitioners,
- f. Ability to carry personal responsibility and autonomous initiative in complicated and unpredictable situations in the specific subject,
- g. Ability to conceive, design, implement and adapt a research project with scientific integrity,

¹ According to the annexure of the Diploma of the Doctoral Programme in Applied Medical Science N790 (Diploma Supplement), the Doctoral Programme in Applied Medical Science N790 is a doctoral programme in accordance with the model of the new European doctoral studies, which can be considered as equivalent to the PhD studies in Northern Europe and Anglo-America.

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- h. Ability to make judgments relevant to medicine in the field and be able to communicate these effectively to both specialist and non-specialist audiences,
- i. Ability to drive technological, social or cultural advances in a scientific society in an applied manner within academic and professional contexts.

Admission requirements

§ 2. (1) Prerequisites for admission to the doctoral programme in applied medical science at the Medical University of Vienna are

- a) the completion of the diploma programme in human medicine or dentistry or the completion of a natural science/technical, relevant or related diploma programme or the completion of a recognised domestic or foreign Master's programme equivalent to the above-mentioned diploma studies, whereby the equivalence is to be determined by the Rectorate within the framework of the admission procedure, as well as
- b) the existence of a dissertation topic within the framework of a research project, a dissertation concept (3) and a supervision commitment for the dissertation.

(2) Persons who fulfil the admission requirements according to § 2 (1) lit. a are entitled to select a supervisor from the registered doctoral supervisors available at the Medical University of Vienna in order to choose a dissertation topic and to prepare a dissertation concept with this supervisor - provided that the latter has given his/her consent to the supervision.

(3) The chosen supervisor and the chosen dissertation topic must be declared to the curriculum director prior to the admission to the doctoral programme by submitting a written dissertation concept according to the specifications of the curriculum director.

Duration of the study programme

§ 3. The doctoral programme in applied medical science consists of a study section with the duration of 6 semesters (180 ECTS credits).

Academic degree

§ 4. Graduates of the doctoral programme in applied medical science shall be awarded the academic degree "Doctor scientiae medicae", abbreviated "Dr.scient.med.", with the title immediately preceding the name.

Organisation

§ 5. The doctoral programme in applied medical science at the Medical University of Vienna is primarily organised in the form of interdisciplinary thematic programmes.

(1) SCOPE OF THE PROGRAMMES: The programmes bring together interested university members from different organisational units/clinics with the aim of offering a comprehensive and high-quality training programme in the respective thematic area. The doctoral candidates carry out their dissertation project within the framework of the programme and also complete the prescribed courses. The involvement of institutions and organisations outside the Medical University of Vienna is possible, provided their value for the training programme is evident.

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(2) NAME OF THE PROGRAMMES: The composition and name of the programmes originates in principle from the initiative of university members interested in establishing such a programme. The programmes shall cover a broad range of topics within the spectrum of tasks of the Medical University of Vienna and include scientists from several organisational units/clinics. A list of programme topics shall be published by the Curriculum Director.

(3) ORGANISATION OF THE PROGRAMMES: The smallest organisational units of the programmes are the supervisors, who are project leaders experienced in the training of doctoral candidates who bring their doctoral position(s) into the programme and actively participate in the training programme. The supervisors are responsible for the organisation and implementation of the dissertation and the accompanying courses (e.g. seminars, journal clubs). Each programme is headed by an appointed curriculum (programme) coordinator who is responsible for coordinating the programme tasks. The Curriculum Coordinator represents the programme externally and is responsible to the Curriculum Director. Since the language of biomedical research and related research fields is English, the programmes and the accompanying courses must be offered in English. In this respect, doctoral students must be proficient in English in order to complete the doctoral programme. In exceptional cases, courses can also be offered in German if justified.

(4) ESTABLISHMENT OF PROGRAMMES: Applications for the establishment of dissertation programmes may be submitted to the Curriculum Director and refer to the research areas defined in the development plan. Applications include information on

- Title,
- Speaker,
- Educational objective,
- Dissertation projects,
- Qualification profile of the supervisors,
- Form, number, content and teachers of the planned courses,
- Methodology,
- Literature.

The applications are reviewed by the Curriculum Director and modified accordingly, if appropriate. Subsequently, the Curriculum Commission for Doctoral Studies is asked for an opinion and the application is then approved or rejected.

Criteria for the evaluation of the application are:

- Structure of the proposal,
- Relationship to the scientific strategy of the university,
- scientific processing of a topic relevant to practice (professional relevance)
- internal university, national and international cooperation,
- Significance for the development of the university,
- critical mass for the supervision of doctoral candidates and the implementation of associated courses,
- peer-reviewed and funded dissertation projects,

- Qualification of supervisors.

(5) QUALITY CRITERIA FOR SUPERVISORS: The supervisors of doctoral dissertation projects

- are themselves scientifically excellent in the respective field (documented by the number of high-quality publications throughout the last 6 years),
- have a proven track record in obtaining third-party funding during the last 6 years,
- have experience in and are committed to supervising doctoral students, and
- can demonstrate the training of doctoral students in the last 6 years and publications with doctoral students/postdocs as first authors.

Courses

§ 6. The doctoral programme in applied medical science includes comprehensive training in the faculty of the respective dissertation topic, as well as the development of general skills and abilities for the scientific processing of a professionally related topic in order to prepare graduates for a career in a variety of academic, medical, industrial and public scientific fields. This accompanying training takes place within the framework of courses.

(1) TYPES OF COURSES:

- a) LECTURES: These are designed to introduce the basic concepts and systematics and display the scientific background of the respective topic; furthermore, they serve to create cross-connections and explain complicated facts.
- b) SEMINARS: They represent an important training method for the acquisition of knowledge, whereby above all, the skills are learned to apply the acquired knowledge to the analysis and solution of questions through the active participation of the students. With this form of teaching, particularly the independent examination of theoretical problems on a scientific basis is taught.
- c) PRACTICE SEMINARS: These serve to acquire skills and abilities as well as an appropriate humane, scientific and social attitude for professional practice in the respective faculties.
- d) JOURNAL CLUBS: These are for learning how to critically evaluate and discuss the scientific literature in regular sessions, generally on a weekly basis, where recently published scientific articles are analysed and discussed.

(2) COMPULSORY COURSES: This refers to courses and academic achievements that are compulsory for all students of the degree programme.

- a) Preparatory course: Introductory lectures and seminars totalling 6 semester hours are to be set aside for this purpose, whereby the focus for medical students is to be on natural science courses, and for non-medical students on medical courses. The general teachings of the preparatory course serve to acquire general skills and abilities for a professional life as a scientist.
- b) BASIC COURSE: An interdisciplinary interactive course cycle covering the respective programme topic in its entirety shall be established with a total of 4 semester hours.
- c) PHD-SYMPOSIUM: Students actively participate in at least one PhD symposium of the Medical University of Vienna and give a presentation on their dissertation project. The participation and presentation activity is to be confirmed by the responsible chairperson(s) of the

session/workshop in which the lecture is given/the poster is presented and is assessed with 6 ECTS.

d) Drafting and defending the WORK PLAN (DISSERTATION PLAN): The students have to draft a work plan (dissertation plan) together with the supervisor and defend it in front of the dissertation committee. The writing and defence of the work plan (dissertation plan) is assessed with 10 ECTS.

(3) COMPULSORY ELECTIVE SUBJECTS: Within the scope of the compulsory elective part of the courses, students are required to complete dissertation seminars and practical seminars totalling 16 semester hours and JOURNAL CLUBS totalling 12 semester hours.

a) SEMINARS FOR DOCTORAL CANDIDATES are courses to be completed for a total of 12 semester hours, dealing with special aspects of the programme topics and specific methods.

b) PRACTICAL SEMINARS to learn skills are to be scheduled for a total of 4 semester hours.

c) JOURNAL CLUBS are courses dealing with programme-specific literature. They are to be established for a total of 12 semester hours.

Doctoral candidates and supervisors are expected to attend seminars and journal clubs on a regular basis.

(4) EXTERNAL STUDY COMPONENTS: Students who wish to complete a part of their studies at a recognised domestic or foreign educational institution are entitled to have the equivalence of planned foreign study parts determined in advance by the Curriculum Director in accordance with the relevant provisions of the UG and the statutes of the Medical University of Vienna.

(5) ECTS CREDIT POINTS: In terms of the European Credit Transfer System (ECTS), the proportion of the study effort for the courses mentioned in paragraph (2) is determined at 1 ECTS point per semester hour each, the courses mentioned in paragraph (3) at 1.5 ECTS points per semester hour each. Thus, the preparatory course is assessed with 6, the basic courses with 4, the PhD symposium with 6, the writing and defence of the dissertation plan with 10, the journal clubs with 18, the dissertation seminars with 18 and the practical seminars with 6 ECTS points, i.e. a total of 68 ECTS points. The work on the dissertation topic represents the main part of the study achievements and is assessed with a total of 112 ECTS points.

(6) SUGGESTION FOR THE DIVISION OF THE SEMESTERS

<i>Courses</i>	<i>Semester hours</i>	<i>ECTS Points</i>
1. Semester:		
Preparatory course	4	4
Basic course	2	2
Journal Club	2	3
Dissertation seminar	2	3
Dissertation – work schedule/dissertation plan (compilation and defence)	-	10
2. Semester:		
Preparatory course	2	2

Basic course	2	2
Journal Club	2	3
Dissertation seminar	2	3
3. Semester:		
Practice seminar	2	3
Journal Club	2	3
Dissertation seminar	2	3
4. Semester:		
Practice seminar	2	3
Journal Club	2	3
Dissertation seminar	2	3
Doctoral thesis - Presentation PhD Symposium		6
5. Semester:		
Journal Club	2	3
Dissertation seminar	2	3
6. Semester:		
Journal Club	2	3
Dissertation seminar	2	3
Doctoral thesis - drafting the paper		112
Total	38	180

Doctoral thesis

§ 7. (1) The doctoral thesis, written and publicly defended, provides the final proof that the candidate has acquired the knowledge and skills to work independently and competently in science. With the doctoral thesis, the candidate demonstrates that he/she can solve an essential scientific problem successfully and with increasing independence and understands how the new results are to be placed in the framework of the current state of knowledge.

(2) The topic of the doctoral thesis shall be taken from one of the thematic programmes (§ 5) or be meaningfully related to one of them. In case of topics that are processed in teamwork, the intellectual and experimental contribution of the candidate must be clearly evident and independently assessable.

(3) The student is entitled to apply for a topic from the suggestions of the available registered doctoral supervisors. Upon admission to the doctoral programme (§ 2), a work plan (dissertation plan) has to be prepared together with the supervisor must be defended before the dissertation committee and submitted together with the opinion of the dissertation committee to the curriculum director for approval. The writing and defence of the work plan (dissertation plan) is assessed with 10 ECTS points.

The dissertation has to be integrated into a research project approved by a strict review system. If the supervisor does not have such a research project, a project proposal prepared according to FWF guidelines can be submitted to the curriculum director, who will carry out a review procedure with regard to scientific quality, priority and available resources.

(4) The available project funds or other resources in terms of material expenditure must suffice to carry out the dissertation

(5) The provisions of the Copyright Act have to be observed when working on the topic and supervising the students.

(6) All members of the Medical University of Vienna (§ 94 (1) UG) with a teaching authorisation or an equivalent qualification are entitled to supervise and assess a dissertation from the subject of their teaching authorisation within the framework of a doctoral study programme, provided that they fulfil the prerequisites and qualification criteria required under §5 (5).

(7) The curriculum director is also entitled to call upon persons with a teaching authorisation at a recognised foreign university or at another domestic or foreign institution of equal rank to universities to supervise and assess dissertations, if their teaching authorisation is equivalent to a teaching authorisation pursuant to § 7 (6), provided they fulfil the prerequisites and qualification criteria specified under § 5 (5).

(8) The curriculum director is entitled to call upon persons without a teaching authorisation, who, however, fulfil the requirements and qualification criteria required according to § 5 (5), to supervise and assess dissertations. Persons at the post-doctoral stage who can be expected to fulfil the qualification criteria required under § 5 (5) based on their previous performance may be called upon to supervise dissertations as junior supervisors. However, they shall be assisted by experienced supervisors for the purpose of promotion.

(9) For one or more doctoral candidates, the curriculum director shall set up a dissertation committee at the beginning of the doctoral programme, consisting of the supervisor and at least two other members, one of whom may not belong to the organisational unit to which the topic of the dissertation is assigned. The members of the dissertation committee shall be announced to the doctoral candidates immediately after acceptance of the topic. The dissertation committee shall monitor the progress of the dissertation at regular intervals, but at least once a year, and, if necessary, issue an opinion on it and serve as a mediator in case of problems between the dissertation candidate and the supervisor.

(10) The dissertation completed according to the dissertation plan is to be submitted to the curriculum director. Without undue delay, the Curriculum Director has to appoint two reviewers to review and assess the dissertation (one reviewer must be a member of MedUni Vienna and one reviewer must be an external reviewer), who shall review and assess the dissertation within a maximum of four months from submission. The supervisor of the dissertation may not be consulted as a reviewer. If the dissertation is not reviewed and assessed within the deadline, the curriculum director shall assign the dissertation to one or two other reviewers for review and assessment at the request of the student.

(11) Within the framework of the dissertation, the student has to deal with the international specialist literature, apply and select adequate methods for the research question with the support of the supervisor, and document the progress of the dissertation and the results in a suitable form (project book). The dissertation has to be written in English, whereby the abstract has to be written in English and German. The structure of the dissertation should correspond to that of a scientific paper according to the "Vancouver Guidelines".

Examination regulations

§ 8. Examinations are to be designed methodically in a comprehensible, objective and valid manner.

- (1) The preparatory courses and the basic course are to be concluded with a course examination.
- (2) The journal clubs, dissertation seminars, practical seminars and the PhD symposium are courses with an immanent examination character. The assessment of the students is therefore not based on a single examination act at the end of the course, but on the basis of regular written and/or oral contributions of the students, ongoing observation and/or verification of the fulfilment of the attendance obligation. Justified absences can be tolerated within a certain framework (guideline: 15% of the total course duration). The assessment of active participation in the PhD symposium, which also includes a presentation on the dissertation project (cf. § 6 (2) lit. c), shall be "attended successfully" in the case of a positive assessment or "attended unsuccessfully" in the case of a negative assessment.
- (3) Section 72 UG applies to the assessment of the examinations and the dissertation.
- (4) The dissertation plan prepared together with the supervisor (§ 7 (3)) shall be defended before the dissertation committee and shall be assessed by the curriculum director with a grade ("1" to "5") according to § 72 (2) UG.
- (5) The positive completion of all courses, the defence of the dissertation plan, the interim assessments by the dissertation committee and the positive assessment of the dissertation thesis are prerequisites for admission to the viva voce examination.
- (6) At the time of the viva, at least one publication with the doctoral candidate as first author should be available in an internationally recognised peer-reviewed journal or accepted for printing.
- (7) In the viva voce examination, the candidate's comprehensive knowledge in the subject area is examined by an examination committee consisting of a chairperson and two examiners. The examiners are to be appointed by the curriculum director based on the subject proximity to the dissertation topic, but should not have a close relationship to the candidate. The supervisor of the dissertation may not be considered as a member of the examination committee. The curriculum director may, for good cause, appoint another examiner instead of a proposed examiner on the basis of a justified application by the student. The viva is intended to assess whether the candidate has the ability to apply the acquired knowledge in the field of the respective programme topic.
- (8) The viva includes topics
 1. from the dissertation including the current state of knowledge relevant to the respective scientific question as well as
 2. from the subject area of the dissertation topic.
- (9) The viva is conducted in the form of a public lecture ("Defensio dissertationis") followed by a scientific discussion, in which primarily the examination committee has to ask questions, but in which the auditorium may also participate. The examination board has to assess the scientific nature of the work and the professional knowledge of the candidate. The professional qualification of the candidate and the professional dimension of the work shall be expressed during the viva. In justified cases (e.g. patent proceedings), the curriculum director is entitled to admit only a qualified audience at the request of the student and/or the supervisor.
- (10) The viva is held in English.
- (11) The doctoral programme in applied medical science has been successfully completed if

1. all courses,
2. the dissertation and
3. the viva voce examination in the dissertation

have been successfully completed. All parts are essential components of the assessment. A negative assessment in one area cannot be compensated for by the performance in the other area.

Crediting between the doctoral studies of the Medical University of Vienna

§ 9. (1) Courses (preparatory course, basic lecture, basic seminar, basic course, dissertation seminars, journal clubs and participation in the PhD/dissertation symposium as well as defence of the work plan/dissertation plan) completed in one of the doctoral studies of the Medical University of Vienna shall be mutually recognised in full.

(2) In the event of a transfer from the PhD programme (N094) to the doctoral programme in applied medical science (N790), students who have successfully completed all courses according to the study plan N094 and whose dissertation has been approved shall have their achievements fully recognised.

(3) The achievements of students who have successfully completed all courses according to the curriculum N790 and whose dissertation has been approved shall be fully recognised when transferring from the doctoral programme in applied medical science (N790) to the PhD programme (N094), provided that the following requirements are met:

- Existence of a first author publication by the student in the field of the dissertation topic in a top journal (ISI ranking).
- Employment from a research project for at least one year (without any involvement in possible routine clinical activities).

Entry into force and transitional regulations

§ 10. (1) This amendment to the curriculum shall enter into force on 1.10.2019.

(2) Students who have started the doctoral programme in applied medical science N 790 at the Medical University of Vienna prior to the entry into force of this curriculum shall be entitled to complete their studies still in accordance with the respective study regulations applicable to them until the end of the grace period of the fifth academic year after the entry into force of this curriculum, i.e. 30.11. 2024, at the latest. Otherwise, students may voluntarily submit to the provisions of the present, new curriculum by means of a simple written declaration. The courses completed according to the previously applicable study regulations (preparatory course, basic course, journal clubs and dissertation seminars as well as practical seminars) are recognised for the doctoral study programme in applied medical science N 790 according to the present curriculum.

The Chairperson of the Senate

Harald Sitte