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142. Ordinance of the University for Continuing Education Krems on the curriculum of the PhD program "Applied Evidence Synthesis in Health Research" (Faculty of Health and Medicine)

§1 Study objectives and qualification profile

- (1) The PhD program "Applied Evidence Synthesis in Health Research" belongs to the group of medical and health science studies. The language of instruction is English. Evidence synthesis is the systematic combination, evaluation and synthesis of data and information from different scientific sources. In this context, statistical methods such as meta-analyses, network meta-analyses, decision-analytical or health economic modeling as well as systematic literature reviews and qualitative meta-syntheses are used. They can be summarized as methods for evidence syntheses. The PhD program aims to further develop methods for evidence syntheses and to research the use of evidence syntheses in decision-making in the healthcare system.
- (2) The PhD program "Applied Evidence Synthesis in Health Research" is designed to enable graduates to carry out independent research at an international level in the field of evidence synthesis and the corresponding methodological approaches. During the program, students also develop the appropriate skills to independently implement different methods for evidence syntheses and to use them successfully for research activities in other areas of the health sciences.
- (3) The PhD program "Applied Evidence Synthesis in Health Research" places particular emphasis on promoting international and interdisciplinary collaboration. Students have the opportunity to become part of the global scientific network Cochrane. The PhD program is implemented in close cooperation with Cochrane Austria. The Austrian branch of the network is based at the Department of Evidence-Based Medicine and Evaluation at the University for Continuing Education Krems. During their training, students have the opportunity to spend time at other international Cochrane centers. This allows them to gain international experience and develop their research focus.
- (4) The intended learning outcomes of the PhD programme "Applied Evidence Synthesis in Health Research" are primarily aimed at enabling students to develop specialized problem-solving skills in the field of evidence synthesis. In this way, they acquire important skills for their individual professional development and at the same time make an original, independent contribution to the further development of the health sciences, medicine, administration and society. This includes in particular:
 - a. to present the state of research; also to research and professionally assess the application of evidence syntheses and their impact on the health system;
 - b. to integrate knowledge from other areas of health sciences and medicine in order to initiate, plan, conduct and evaluate research processes and to work in national and international research teams; to gain new insights and actively participate in the further development of science;

- c. to recognize interfaces with related interdisciplinary fields of research and to establish or design references to these;
 - d. to critically reflect on the adequate use of methods within the framework of the dissertation;
 - e. to write scientific papers that correspond to the international quality standards of peer-reviewed publications in this field of research;
 - f. to reflect on and formulate the ethical and social, in particular gender and diversity-related aspects and consequences of their own research; and
 - g. to present their own research results in a transdisciplinary manner in scientific discourse, in communication with experts from the field and interested non-experts.
- (5) The PhD program "Applied Evidence Synthesis in Health Research" is aimed at persons with the following qualification profile:
- a. Persons with an international background who wish to continue their education in the sense of the Bologna Process after a Bachelor's and Master's degree (Diploma) in a research-oriented manner, at the interface between methodological research on evidence syntheses and their application in the health sector;
 - b. Persons who aspire to a scientific career in the field of clinical research, public health research or health policy research;
 - c. Persons with a high level of interest in methodological research in the field of evidence syntheses;
 - d. Young scientists who are preparing for a career in international academia and want to interact with decision-makers in the health sector.

§ 2 Admission

- (1) Admission to the PhD program requires the completion of a subject-related diploma or master's degree that can be classified as part of the health sciences. The English language skills required for the PhD program must correspond to at least level B2 of the Common European Framework of Reference for Languages (CEFR). Proof of this must be provided in the form of a TOEFL test (Test of English as a Foreign Language) and will be assessed by the PhD coordinator.
- (2) Admission to the PhD program "Applied Evidence Synthesis in Health Research" is subject to funding. It can only be granted if the dissertation project can be realized on the basis of sufficient research funding (e.g. through project funds, scholarships, etc.). A financing plan for the dissertation project must be submitted to the PhD coordinator.
- (3) A mandatory requirement for admission to the PhD program "Applied Evidence Synthesis in Health Research" is proof of basic knowledge in the fields of epidemiology, public health and biostatistics. The relevant evidence will be assessed by the PhD coordinator.
- (4) Admission to the program is the responsibility of the Rectorate.
- (5) The following documents must be submitted to the Service Center for Students of the University for Continuing Education Krems for admission to the study program:
 - a. application form, incl. Europass CV and letter of intent;
 - b. proof of identity (passport, identity card);
 - c. high school graduation certificate;
 - d. graduation, diploma or master's degree certificate and
 - e. if necessary: legalization of foreign documents.

§ 3 Scope and duration of studies

- (1) The PhD program "*Applied Evidence Synthesis in Health Research*" lasts at least three years (at least six semesters).
- (2) The scope of study is 180 ECTS points (European Credit Transfer System). The courses comprise a total of 35 ECTS credits. They are made up of PhD colloquia (6 ECTS points) and core modules (17 ECTS points) as well as an elective area (12 ECTS points). A total of 140 ECTS credits are allocated to the completion of the research project and the writing of the dissertation, and 5 ECTS credits to the final examination (Rigorosum) and defense.
- (3) Breakdown of credit points to calculate the workload: One ECTS point corresponds to 25 working hours of the student (according to UG §54 para. 2 "[...] With these credits the share of the workload of the students related to the individual academic achievements shall be determined in relation to the entire programme, with an amount of 1,500 hours for one year of studies and 60 credits being assigned to this workload.").

§ 4. Modules and courses

(1) As part of the PhD program "*Applied Evidence Synthesis in Health Research*", students must complete courses amounting to at least 35 ECTS credits or provide corresponding supplementary coursework. The curriculum is divided into the following modules:

- Module 1: PhD colloquia (6 ECTS credits)
- Modules 2, 3, 4: Core modules (17 ECTS credits)
- Module 5: Electives (12 ECTS credits)

Figure 1 shows the content structure and timeline of the curriculum.

Figure 1: Content and schedule of the PhD program *Applied Evidence Synthesis in Health Research*



ECTS= European Credit Transfer System

(2) Module 1 consists of the PhD colloquia. It includes annual meetings with the PhD committee, during which the progress of the work is discussed and evaluated. A total of 6 ECTS credits must be earned to complete Module 1 (Table 1). The aim of these courses is to provide students with a regular platform for academic discussion of their research project and its progress. The colloquia are held once a year and attendance is compulsory. Students prepare a presentation on their dissertation project and a corresponding progress report for each colloquium. The other students comment on the report in the form of a peer review. During the PhD colloquia, students have the opportunity to engage in critical discourse with other students and their supervisors. Through the colloquia, students should also learn to give their colleagues well-founded scientific feedback.

Table 1: Overview of Module 1 (PhD colloquia)

M1	Module 1: PhD Colloquia	Elective/ mandatory	ECTS credits
L 1.1	PhD Colloquium 1	mandatory	2
L 1.2	PhD Colloquium 2	mandatory	2
L 1.3	PhD Colloquium 3	mandatory	2

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(3) Modules 2, 3 and 4 are the core modules of the PhD program. The aim of the core modules is to provide students with the essential foundations for scientific work and methodological research in the field of evidence synthesis. The total scope of the core modules is 17 ECTS credits.

- Module 2: Basics of Scientific Research and Teaching (3 ECTS credits)
- Module 3: Statistical Methods and Modelling (6 ECTS credits)
- Module 4: Methods of Evidence Synthesis (8 ECTS credits)

The courses of the three core modules are taught in the form of seminars.

Module 2 (**Basics of Scientific Research and Teaching**; Table 2) promotes general basic skills in scientific work. Students complete courses worth a total of 3 ECTS credits.

Table 2: Overview of Module 2 (Basics of Scientific Research and Teaching)

M2	Module 2: Basics of Scientific Research and Teaching	Elective/ mandatory	ECTS credits
L 2.1	Good scientific practice, research integrity and ethics	mandatory	1
L 2.2	Project management and grant acquisition	mandatory	1
L 2.3	Scientific Presentations, Scientific Writing, Peer Review and Publications	mandatory	0,5
L 2.4	Teaching and Didactics	mandatory	0,5

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Module 3 (**Statistical Methods and Modeling**; Table 3) provides knowledge on biostatistics and modeling for health sciences. These courses comprise 6 ECTS credits. The seminar on modeling (Introduction to Modeling for Healthcare) primarily teaches the basics of decision-analytical and health economic modeling. In Module 3, students also acquire essential skills in the free programming language R in order to be able to carry out statistical calculations and design graphics.

Table 3: Overview of Module 3 (Statistical Methods and Modeling)

M3	Module 3: Statistical Methods and Modelling	Elective/ mandatory	ECTS credits
L 3.1	Statistics for the Life Sciences	mandatory	2
L 3.2	Statistics for Evidence-based Health Care Research	mandatory	1
L 3.3	Data Analysis with R	mandatory	1
L 3.4	Introduction to Modelling for Healthcare	mandatory	2

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Module 4 (**Methods of Evidence Synthesis**; Table 4) covers the central content of the PhD program: In addition to the preparation of systematic reviews and meta-analyses, students learn how to conduct reliable and targeted literature searches. They acquire the most important skills to adequately present and prepare research results. Module 4 also addresses the use of evidence syntheses in the context of health care and health policy. The seminars in this module comprise 8 ECTS credits.

Table 4: Overview of Module 4 (Methods of Evidence Synthesis)

M4	Module 3: Statistical Methods and Modelling	Elective/ mandatory	ECTS credits
L 4.1	Methods of Evidence Synthesis	mandatory	4
L 4.2	Evidence-informed Decision Making in Healthcare and Health Policy	mandatory	1
L 4.3	Systematic Literature Searches and Information Retrieval	mandatory	1
L 4.4	Presentation and Visualization of Risks and Treatment Effects	mandatory	1
L 4.5	Certainty of Evidence and Guideline Development	mandatory	4

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The aim of Module 5 (Elective Area: **Further Academic Achievements and Electives**, Table 5) is to deepen the dissertation topic. The module can be designed relatively freely. Students must complete a total of 12 ECTS credits. To this end, they take part in the Cochrane International Mobility program, are active as lecturers, take on other university activities or complete other elective courses (Table 5). Which courses are chosen in the elective area must be specified in the dissertation agreement.

Cochrane International Mobility enables students to spend time at another international Cochrane office, provided that the dissertation project is suitable for their methodological focus. Students can earn up to 10 ECTS credits through the Cochrane International Mobility program.

Teaching activities or university activities include active teaching at Campus Krems, the supervision of Bachelor's theses or academic collaboration in university research projects outside of one's own doctoral studies. A teaching activity of six teaching hours, including preparation and follow-up work, corresponds to 1 ECTS point. Supervision of a Bachelor's thesis is also credited with 1 ECTS point. The scope or number of ECTS points for other university work must be agreed in advance with the supervisor and the PhD coordinator.

The Journal Club takes place four to six times per semester. Students determine the thematic focus together with the PhD coordinator. Further elective courses serve to deepen the specific methods that the students use for the work on the respective dissertation projects. In addition to the methodological elective courses offered by the UWK, external topic-specific courses can also be taken.

Table 5: Contents and scope of the elective area

M5	Module 5: Further Academic Achievements and Electives	elective* / mandatory	ECTS-credits
	<i>Further Academic Achievements</i>		
L 5.1	Cochrane International Mobility I	elective	4
L 5.2	Cochrane International Mobility II	elective	6
L 5.3	Teaching or University-related Activities I	elective	1
L 5.4	Teaching or University-related Activities II	elective	1
L 5.5	Teaching or University-related Activities III	elective	1
	<i>Electives</i>		
L 5.6	Journal Club I	elective	2
L 5.7	Journal Club II	elective	2
L 5.8	Journal Club III	elective	2
L 5.9	Survey Research and Questionnaire Design	elective	1
L 5.10	Qualitative Methods	elective	1
L 5.11	Evaluation Research	elective	1
L 5.12	Evidence-based Public Health	elective	1
L 5.13	Registries and Analyses of Registry Data	elective	2
L 5.14	Modelling Approaches for Health Technology Assessments	elective	2
L 5.15	Selected Methods of Evidence Synthesis or other topic-specific courses*	elective	2

*If specific content-related skills are required for the dissertation project, these courses can be completed either at the UWK or externally and credited as an elective course.

ECTS = European Credit Transfer System; UWK = University for Continuing Education Krems

§ 5 Examination regulations

The fundamentals of auditing are regulated in the Statutes of the University for Continuing Education Krems, Part II, § 2, Paras. 1-5.

- (1) PhD colloquia: In the case of the individual PhD colloquia, successful participation in the course is assessed individually on the basis of the prepared documents and the discussion of the PhD committee with the students.
- (2) Core modules: The individual courses are courses with continuous assessment and are graded on the basis of ongoing participation and written or oral examination elements.
- (3) Elective area: Depending on the choice of courses, the following work must be completed in the elective area:
 - a. Cochrane International Mobility: The assessment is carried out by the scientists of the host institute.
 - b. Teaching activities: Successful teaching activities are confirmed by the respective program director.
 - c. Other university activities: Successful participation is confirmed by the respective head (of the project, of the department).
 - d. Other elective courses: The individual courses are courses with continuous assessment and can be graded on the basis of ongoing participation as well as written or oral examination elements.
- (4) Dissertation: The framework regulation for dissertations can be found in the Statutes of the University for Continuing Education Krems (§11). The dissertation must demonstrate the ability to solve scientific problems independently. The dissertation must make a significant, independent contribution to the field of research. The thesis is written in the form of a cumulative dissertation based on peer-reviewed publications that have been written and published in journals.

Publications for the cumulative dissertation: The minimum requirement for a cumulative dissertation is the publication of three peer-reviewed manuscripts as first author and the writing of a dissertation that deals with the chosen dissertation topic. For the cumulative dissertation, original work in peer-reviewed journals (published or in print; the declaration of acceptance for printing must be enclosed) counts. Publications in SCI, SSCI and A&HCI journals also count. Only papers published in journals that are in the top 80 percent of the rankings will be counted. Publications from the bottom 20 percent are not accepted. The ranking is based on the impact factors from the unmodified ranking lists of the Institute of Scientific Information (ISI). Letters, editorials, case reports, book chapters or contributions that have not gone through a peer review system are not accepted. Publications will only be recognized if they were produced during admission to the PhD program "*Applied Evidence Syntheses in Health Research*". Earlier publications may not be submitted, even if they are thematically relevant to the PhD topic. Publications in journals that are classified as less trustworthy according to the Norwegian Scientific Index (<https://kanalregister.hkdir.no/publiseringskanaler/Om>) (Level 0 and Level X) are also not recognized.

Of the three peer-reviewed journal publications as first author, at least two must have been accepted. The third publication must at least be proven to have been forwarded for peer review by the journal.

Dissertation thesis: In addition to the publication of the three peer-reviewed manuscripts, the PhD student must write a cumulative dissertation thesis. The dissertation thesis must be an independent original work. It must be prepared and written by the student independently and in accordance with the rules of good scientific practice. The dissertation thesis is to be understood as an overview of research contributions. It must refer to the individual manuscripts. The dissertation thesis must be written in English and must meet the requirements of the guidelines for writing a dissertation thesis (see PhD regulations). The dissertation thesis must be submitted to two reviewers for a dissertation review, whereby one reviewer must belong to an external domestic or international university.

- (5) Defense of dissertation (Rigorosum): The framework regulation for the so called Rigorosum can be found in the Statutes of the University for Continuing Education Krems (§11). The Rigorosum is the final examination. The dissertation must be defended as part of this examination.

§ 6 Quality assurance and evaluation

- (1) Essential aspects of quality assurance for the PhD program "*Applied Evidence Synthesis in Health Research*" are
- the guidance of the student by a scientifically qualified supervisor;
 - the written formulation of the dissertation project the presentation to the PhD committee;
 - the supervision of the dissertation by the PhD committee;
 - half-yearly progress reports to the PhD committee and annual feedback discussions with the PhD committee as part of the PhD colloquia;
 - the assessment of the dissertation by two assessors, two female assessors, one of whom is from an external university
 - and the final oral examination.
- (2) The PhD program "*Applied Evidence Synthesis in Health Research*" is evaluated via:
- the evaluation of the courses defined in the curriculum by the students (using a standardized evaluation form);
 - annual progress reports of the student to the PhD committee
 - as well as a final feedback meeting of the student with the chairperson of the PhD committee after completion of the PhD program. If the chairperson is also the supervisor of the dissertation, a substitute must be nominated for the meeting.
 - All feedback is incorporated into the further development of the curriculum.
 - The evaluation and further development of the PhD program "*Applied Evidence Synthesis in Health Research*" is also ensured by annual meetings of the PhD faculty.



§ 7 Academic degree

Graduates of the degree program "*Applied Evidence Synthesis in Health Research*" are to be awarded the academic degree Doctor of Philosophy (PhD).

§ 8 Coming into force

The curriculum comes into force on October 1, 2023.