

BACKGROUND

Pursuant to Act CCIV of 2011 on National Higher Education and its amendment, Act CXXXI of 2015, the main framework of doctoral education from 1 September 2016 is as follows:

The doctoral programme comprises 8 semesters.

The number of credits required for the absolutorium is 240.

The programme has two stages:

the first, a 4-semester "training and research phase", based primarily on contact hours; the second, also a 4-semester "research and dissertation phase", at the end of which the actual award of the doctoral degree takes place. During this period the student can deepen their knowledge in the research field and pursue the scientific work underlying the dissertation.

At the end of the 4th semester, passing the comprehensive examination (screening) is mandatory; depending on the result, the State Scholarship may be withdrawn and the programme may be discontinued. Following the screening completed at the end of the 4th semester, the completed dissertation must be submitted within 3 years. This deadline may be extended by an additional year on grounds of equity.

A student may remain in student status for only 8 semesters (with 2 passive semesters possible).

Doctoral education may also be entered by a person who has individually prepared for the degree, provided that they have fulfilled the admission and doctoral training requirements. In this case, student status is established upon acceptance of the request to initiate the degree procedure and successful completion of the comprehensive examination.

II. PROFESSIONAL COMPETENCES TO BE ACQUIRED

An information scientist holding a PhD degree

a) knowledge

Interprets and handles, in a creative manner, the specific mathematical, natural science and social science principles, rules, relationships and procedures required for practicing the field of information science. Creatively interprets the expected directions of development and advancement in the field of information science. Creatively interprets the boundaries, requirements and expected directions of development of other fields related to information science (for example logistics, management, environmental protection, quality assurance, electrical engineering, law, economics, occupational and fire safety, and security engineering). Possesses the research methodology knowledge required for independent research in the field of information science. Knows modern teaching methods in higher education.

b) abilities

Applies mathematical and computer science principles, rules, relationships and procedures innovatively in order to extend the community's knowledge with new elements. Is capable of carrying out research in the discipline, solving emerging special problems, and creating and applying new interdisciplinary methods. During research work, is able to organize and lead

interdisciplinary research groups. In the given scientific field, is able to create and have recognized new research techniques and approaches. Is able, in a creative manner, to apply ICT tools and methods to solve information science problems. Is capable of contributing to higher education teaching tasks in the discipline.

c) attitude

Committed to and critical of professional and technological development and innovation in the field of information science. Proactive and critical in developing new methods and tools related to the field. Committed to quality requirements.

d) autonomy and responsibility

Solves information science problems creatively. Assumes a leading role in solving information processes and problems. Participates in professional cooperation in a leading capacity. Creatively initiates research in new knowledge domains. Participates as an equal discussion partner in professional dialogues with experts from related fields. Assumes responsibility for the entire system of activities under their direction.

III. COMPONENTS OF THE PHD PROGRAMME

Independent research activity carried out in topics announced by the doctoral school constitutes the most important part of doctoral education. Each doctoral student has one and only one supervisor, who bears full responsibility for directing and supporting the student's studies, research work, publication of results and preparation of the dissertation. Dual supervision with the involvement of a co-supervisor is permitted only in the case of international cooperative training or an interdisciplinary topic, on the basis of a topic announcement approved by the Doctoral School Council (DIT) and published with the prior consent of the University Habilitation Committee and Doctoral Council (EHBDT). In the case of external supervision on the basis of a contract concluded with the doctoral school, the DIT appoints an internal consultant who supports the supervisor's work on behalf of the University and monitors the student's academic progress.

During the doctoral programme, in addition to doctoral courses announced for the given semester, students may choose MSc or PhD courses, including those offered by another university, which are accepted and recognized for credit by the Doctoral School Council. The range of courses is further expanded by lectures delivered in English by invited speakers in individual semesters. The credits earned for course attendance are concentrated in the first 4 semesters of the two-stage programme. Activities with an international dimension and those strengthening related competences are also recognized during the training; credits may be awarded for participation in international intensive courses and thematic summer schools (or winter schools), provided participation is documented and supported by the supervisor.

Guided teaching is part of the programme, during which the student develops presentation and communication skills under the supervision of a designated instructor. The course and the assigned credits are designated - in consultation with the supervisor - by the head of the department of the supervisor/consultant; completion is accepted and graded by the head of department based on the recommendation of the course coordinator. For teaching activity exceeding the amount prescribed in doctoral education, remuneration must be paid in accordance with Section 179 of the BME Study and Examination Regulations.

The tutorial nature of the programme is emphasized by regular consultations recognized with credit points, as well as support for research and publication activity. Each semester, the supervisor evaluates the student's preparedness and activity shown during consultations with research and publication credits. The credit recommended for research work recognizes proportionate progress in the doctoral topic. Publication credits may be awarded for publishing new results in international journals or presenting them at international conferences, including preparatory activities as well (i.e. acceptance/publication of the paper is not a prerequisite). Annual evaluation of research performance includes presenting the results achieved during the reporting period in a lecture at a professional day organized by the research laboratories operating at the departments.

IV. MODEL CURRICULUM

PhD model curriculum									
Course	Total contact hours/credits	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
Elective course 1	4/5	4/5							
Elective course 2	4/5	4/5							
Elective course 3	4/5		4/5						
Elective course 4	4/5		4/5						
Elective course 5	4/5			4/5					
Elective course 6	4/5			4/5					
Teaching activity	24/30	4/5	4/5	4/5	4/5	4/5	4/5		
Research	96/120	8/10	8/10	8/10	12/15	12/15	16/20	16/20	16/20
Publication	48/60	4/5	4/5	4/5	8/10	8/10	4/5	8/10	8/10
Total:	192/240	24/30	24/30	24/30	24/30	24/30	24/30	24/30	24/30

It is recommended that the credits earned for course attendance be concentrated in the first 4 semesters. The last 4 semesters should focus on research and intensive publishing.

Training credits

According to the model curriculum, 30 training credits must be earned by completing courses, taking into account the following:

2 courses, totaling 10 credits, must be discipline-based foundation courses belonging to two different professional blocks. The professional blocks and the courses assigned to them are available on the doctoral school's website.

In addition to the discipline-based foundation courses, at least a further 10 credits must be completed from doctoral courses aligned with the doctoral research topic. For courses outside the Faculty, approval by the DIT is required.

Non-professional courses aimed at research methodology or other soft-skill development may be taken for up to 5 credits; no DIT approval is required for these.

A course with an individual syllabus and independent preparation may be completed for up to 5 credits. The request submitted to the DIT must contain the number of credits, the syllabus prepared by the doctoral student's supervisor, and the literature to be covered. If supported by the DIT, the student prepares independently for the end-of-semester examination, which is taken before the supervisor and a member designated by the DIT.

Credits beyond the two discipline-based courses and the two doctoral courses may also be earned from the course offerings of other doctoral schools (without credit limit), from professional courses announced in master's programmes (up to 10 credits), or by completing summer/winter schools (up to 5 credits). Approval by the DIT is required for enrolling in these. Credit recognition may also be requested for courses previously completed during the master's programme, provided that these credits were earned in excess of the number required for issuance of the master's degree.

The language of the doctoral school's courses is English. By agreement between the audience and the instructor, classes may also be taught in Hungarian.

Research activity

The programme has a tutorial character. Therefore, within research activity, "consultation with the supervisor" (including preparation for it and evaluation of activity shown there) is recognized with credit points. The major part of research credit recognizes research work itself, but may also include conference/workshop participation, study trips, institute visits, etc.

Publication activity

The objective is that by earning publication credits, the minimum requirements of the VIK Doctoral School of Information Sciences will automatically be fulfilled. This should take place in two stages:

by the end of the fourth semester, the total publication credits for the first 4 semesters (25 credits) can only be obtained if the doctoral student has fulfilled at least half of the minimum publication requirements necessary for the award of the degree;

by the end of the eighth semester, the total publication credits for all 8 semesters (60 credits) can only be obtained if the doctoral student has fully met the minimum publication requirements necessary to initiate the degree procedure.

The credit points for publication activity may not be divided. In order to ensure continuous progress from the publication perspective, it is recommended that credits be earned according to the following criteria:

The Publication credit for Semester 1 is awarded if the student has any publication already published, or by the end of the semester has at least one draft of a foreign-language conference or journal paper.

The Publication credit for Semester 2 is awarded if the student has any publication already published, or by the end of the semester has at least one submitted foreign-language conference or journal paper.

The Publication credit for Semester 3 is awarded if the student has at least one already published foreign-language conference or journal publication.

The Publication credit for Semester 4 is awarded if the student has at least one already published foreign-language conference or journal publication and has at least one submitted WoS or Scopus journal paper. At the same time, the student must have obtained at least half of the minimum publication score required for the award of the degree.

The Publication credit for Semester 5 is awarded if the student has at least one already published foreign-language conference or journal publication, has at least one submitted WoS or Scopus journal paper, and has a draft of an additional conference or journal paper.

The Publication credit for Semester 6 is awarded if the student has at least one already published foreign-language conference publication and one WoS or Scopus journal publication, has at least one further submitted foreign-language peer-reviewed journal paper, and one further submitted conference paper.

The Publication credit for Semester 7 is awarded if the student has at least one already published foreign-language conference publication and one WoS or Scopus journal publication, and has at least one further submitted foreign-language peer-reviewed journal paper.

The Publication credit for Semester 8 is awarded if, from the publication perspective, the student has obtained at least the minimum score required to initiate the degree procedure.

Checking the criteria for publication credits and awarding the credit points is the responsibility of the supervisor.

V. PROVISIONS AFFECTING STUDENT STATUS

The doctoral student's status shall terminate if, in an active semester, the student fails to earn at least 15 credits (BME SER Section 186(2)).

A state scholarship student who fails to earn at least 20 credits in an active semester may, upon recommendation by the DIT and by decision of the Dean, be reclassified to self-financed status (BME DHSz Section 13(8)).

Students in self-financed training may, upon request and with the supportive opinion of the DIT, be reclassified to state scholarship status (details: BME DHSz Section 13(8)).

If, at any time during the second phase of the programme, a student submits the doctoral dissertation and the Habilitation Committee and Doctoral Council (HBDT) admits it to review, then the semester's research and publication credits are recognized on the date of the HBDT decision. A student who thereby fulfills all study and examination requirements prescribed in the curriculum, together with the required 240 credits, obtains the absolutorium on the date of the HBDT decision, while student status - and, in the case of a scholarship student, scholarship entitlement - remains in place until the last day of the semester (Act on National Higher Education, Section 59(1)(d)).

VI. COMPREHENSIVE EXAMINATION

1. General information - EHBDD recommendation

A prerequisite for admission to the comprehensive examination is the completion of at least 120 credits in the first four semesters of doctoral training and the acquisition of all "training credits" prescribed in the doctoral school's training plan (except for those who individually prepared for the degree, whose student status is established upon application for and acceptance to the comprehensive examination).

The comprehensive examination must be taken publicly before a committee. The examination committee consists of at least three members, at least one third of whom are not employed by the institution operating the doctoral school. The chair of the committee shall be a university professor, Professor Emeritus or a holder of the title Doctor of the Hungarian Academy of Sciences. All members of the committee must hold a scientific degree. The supervisor is a non-voting member of the committee. At least one week before the examination, the supervisor shall send an electronic evaluation of the student's performance to the chair of the committee.

The comprehensive examination consists of two parts: in one part the theoretical preparedness of the candidate is assessed ("theoretical part"), and in the other part the candidate reports on scientific progress ("dissertation part").

In the theoretical part of the comprehensive examination, the candidate is examined from two professional blocks. The list of courses belonging to the professional blocks and the topics for the comprehensive examination are available on the doctoral school's website.

In the second part of the comprehensive examination, the candidate reports in the form of a presentation on the relevant literature, the research results achieved so far, the research plan for the second stage of doctoral training, and the schedule for completing the dissertation and publishing the results. In the presentation, the candidate addresses the scientific significance and innovative content of the results and, where relevant, the technological motivations of the research and the practical applicability of the results. At least one week before the examination, the candidate electronically submits to the committee a short summary of the results achieved so far, along with the submitted and/or published papers.

The members of the examination committee evaluate the theoretical and dissertation parts of the examination separately. The comprehensive examination is successful if the majority of the committee members judge both parts to be successful. A doctoral student may repeat the unsuccessful theoretical part once within the same examination period.

Minutes including a textual evaluation shall be prepared of the comprehensive examination.

The result of the examination must be announced on the day of the oral examination.

The result of the comprehensive examination does not count towards the final qualification of the doctoral degree, but successful completion is a condition for entering the second stage of the programme.

2. Faculty implementation - structure of the comprehensive screening examination

2.1. The prerequisites for admission to the comprehensive screening examination (hereinafter: Examination), as formulated in the doctoral schools' training plans, are as follows:

Admission to the comprehensive examination is decided by the DIT. The credit prerequisite is the completion of at least 120 credits in the first four semesters of doctoral training (hereinafter: Training) and all course credits prescribed in the doctoral school's model curriculum (except for those individually preparing for the degree, whose student status is established upon application for and acceptance to the Examination).

The publication prerequisite for admission to the Examination is at least one scientific publication published in, accepted by, or submitted to a journal indexed in the Web of Science or Scopus database, and at least one scientific paper published in, accepted by, or submitted to a peer-reviewed conference based on a full paper. Formal fulfillment of this condition does not guarantee admission: the DIT substantively examines the quality of the publication of new scientific results and the candidate's contribution to the published results. The DIT records and justifies admission or refusal in the minutes.

Both parts of the comprehensive examination (the "course" examination and the "thesis" examination) are taken by the student on the same occasion before a committee of the same composition.

2.2. Courses to be chosen during the comprehensive examination

Given the discipline-group nature of doctoral training, the possible examination topics are linked to so-called Professional Blocks (PB). PBs contain the courses of a comprehensive professional field (minimum 3, maximum 5 courses). Each PB has an examination topic list of 36 to 60 items and a bibliography to aid preparation.

Since PBs integrate several courses, the candidate only needs to select 12 topic areas out of the (maximum) 60 when applying for the examination. For example, if the candidate has taken only one of the courses contained in the PB, only 12 topics related to that course are selected. If the candidate has taken more than one course from the given PB, there is greater freedom to designate 12 topics in line with their own interest for preparation.

In order to verify the comprehensive nature of the candidate's knowledge, candidates must select 12 topics from each of two PBs.

The list of PBs and the relevant courses is available on the doctoral school's website.

Since students have completed at least two of the courses forming the PBs before the comprehensive examination, they are able to prepare with an adequate background, as they have already acquired the knowledge covering the selected parts of the examination topics by completing these courses.

2.3. Content elements of the examination and the method of evaluation:

The conditions relating to the composition of the examination committee are contained in the training plan.

Elements and scoring of the course examination

The candidate is examined before the examination committee on the basis of the selected 12-12 topics from 2 Professional Blocks. Each member of the examination committee evaluates the answers given from the Professional Blocks separately on a scale of 1 to 5 (achievement of 70% is required).

Aspects and scoring of the "thesis examination"

Based on the literature of the topic, present the results achieved so far in the field where you have carried out your research and identify the open questions.

Formulate the theses you have achieved in your research work so far (or that will be achieved within the next year) (at least two such results).

Summarize the content of your publications so far and explain what publications you plan in the future.

Present your plans, tasks and schedule for completing the dissertation over the next two years.

Suggested scoring of the thesis examination:

Doctoral studies (max. 30 points):

$(\text{credits earned} / 90) * (\text{average grade earned} / 5) * 30$, or max. 30 points if this exceeds 30 for a candidate (not only grades, but also completion of the curriculum-prescribed credits are taken into account).

Publication performance (max. 40 points):

In the case of published publications: $(\text{points awarded according to doctoral scoring} / 6) * 40$, or max. 40 points if this would exceed 40 for a candidate.

If the candidate did not reach 40 points according to the previous score, but already has an accepted publication, then at most one already submitted but not yet accepted publication may be included with proof of submission:

$(\text{points awarded according to doctoral scoring for all publications (published + submitted)}) / 2 * 30$, or max. 30 points if this would exceed 30 for a candidate.

Knowledge of the topic and the outlining of theses based on the oral presentation (max. 30 points)

The comprehensive examination is successful only if all of the following conditions are met:

The candidate received at least 15 points for doctoral studies.

For both courses, the average points awarded in the examination reaches 3.5.

The candidate received at least 20 points for the part assessing knowledge of the topic and the outlining of theses based on the oral presentation.

The candidate received at least 15 points for publication performance.

The total score of the thesis examination exceeds 50 points.

2.4. Application for the examination and the method of administration

Before applying, it is definitely advisable to consult the supervisor regarding the selected Professional Blocks and topics, as well as the background materials related to the thesis examination.

Application for the screening examination must be submitted in the second year after the start of doctoral studies (if studies start in September, no later than 15 May; if studies start in February, no later than 6 December) by a request submitted to the Doctoral Council together with the uploaded materials listed below. The form is available electronically on the Faculty website.

The following information must be provided and attached to the application:

All publications published so far (if any) must be entered into MTMT.

All publications (those published, those submitted, any acceptance letters received in the meantime, or those already completed but not yet submitted) must be uploaded to the webpage indicated on the Faculty website.

A short thesis-booklet-style summary of the results achieved so far (approximately max. 4-5 pages, following the structure: background - objectives - new scientific results - publications).

The list of the two selected Professional Blocks and the 12-12 selected topic items from them.

A short summary (max. 1 page) by the supervisor of the candidate's work.

The Doctoral Council decides on the designation of the examination committee related to the student's research topic and course examination, of which the student and the supervisor are notified.

The date of the examination is determined by the Doctoral Council (with further consultation with the candidate if justified); the Dean's Office sends notification of the date to the persons concerned.

The supervisor is invited to the examination but is a non-voting member of the examination committee.

Budapest, 25 April 2024