

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS

Pál Vásárhelyi Doctoral School of Civil Engineering and Earth Sciences

Academic Plan

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I. ELEMENTS OF THE PHD STUDIES

The *research activity* made according to the topic assigned to the student by the doctoral school is the most important part of the PhD study programme. Each PhD student has only one supervisor that directs her/him with full responsibility and helps her/him to study, conduct research, publish the results and write the dissertation. The tutoring character of the PhD programme is emphasized by the fact that the regular consultation is honoured by credits, and by the support of the research and publication activities. The supervisor rates the student's preparedness and activity during the consultations with a grade at the end of each semester.

During the PhD studies, besides the PhD subjects announced for the current semester, students can also choose subjects from the MSc or PhD programme, even offered by other faculty or university, provided that the Council of the Doctoral School has previously accepted and recognised them with credit. The list of available subjects can be extended with the English presentations of invited guest lecturers or with successful participation at summer or winter schools, previously recognised with credits by the Council of the Doctoral School.

Directed teaching is also part of the PhD programme, during which the student improves her/his presentation and communication skills under the guidance of a designated lecturer, giving university classes based on a previously developed and well-documented teaching material. The subject and its credit are designated by the head of the supervisor's department after consulting with the supervisor. The accomplishment is also certified by the head, based on the supervisor's recommendation.

In the second part of the PhD programme the emphasis is on research, publishing the results and writing the dissertation. Research credits are given for presenting the new results at conferences (as a presentation or on poster), study trips or participation in international cooperations.

The supervisor honours the **publication activity** with credits and thereby ensures that minimum requirements are satisfied for the registration to the comprehensive exam until the end of the fourth semester, and for the procedure to obtain the doctoral degree until the eighth semester. Credits given for publications are specified at the end of this chapter. Full credits are given for accepted publications, whereas half of the credits are given for submitted (but not yet accepted) publications. Publications published before the admission to the doctoral school are honoured with credits in the first semester.

During the training students shall get 240 credits. The credits obtained by particular activities could have a different distribution for different students or research topics. The planning of each semester is the task of the student under the guidance of the supervisor. The following table shows the recommended, minimum and maximum credit values for particular activities:

	Subjects	Teaching	Research	Publications
Recommended	30	24	138	48
Minimum to meet	30	10	100	36
Maximum taken into account	48	36	150	60

It is recommended to plan the order of the activities by following the sample curriculum (as detailed in Chapter II).

Credits awarded for publication work

Publications from research results can be honoured with credits according to the table below. Half of the credits are given upon submitting a publication and the remaining credits are given upon acceptance.

Type of publication	Credits
Book in English /other language	15/12
Book part, chapter in English/other language	5/4
Journal article* in English /other language	12/6
Conference paper in proceedings* in English/other language	4/2
Article in a department publication* in English /other language	2/1
Unpublished scientific presentation in English /other language	2/1

* Only peer-reviewed publications, accessible on paper or electronically. For publications in non peer-reviewed volumes half of the credits above are given. Conference papers and department publications are eligible only if at least 4 pages long.

The credits in the table should be divided by the number of authors, excluding the supervisor (i.e., taking the full credits if a paper is written by the doctoral student and its supervisor).

II. SAMPLE CURRICULUM

Activity	creditsTotal	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
Subjects	30								
Subjects*	30	6/e/9	6/e/9	6/e/9	2/e/3				
Teaching	24								
Teaching	24	2/m/3	2/m/3	2/m/3	4/m/5	3/m/5	3/m/5		
Research	138								
Consultation	44	5/m/5	5/m/5	5/m/5	5/m/5	6/m/6	6/m/6	6/m/6	6/m/6
Research	94	10	10	10	10	12	12	15	15
Publications	48								
Publication and conference	48	3	3	3	7	7	7	9	9
In total:	240	30	30	30	30	30	30	30	30

* Summer/winter school course credits are also counted here.

Lines in red have three fields: weekly contact hours / exam (e) or mid-semester grade (m) / credits

III. ACQUIRING THE PROFESSIONAL COMPETENCES

(Please consult the original Hungarian document. This chapter hasn't been translated yet.)

IV. THE COMPREHENSIVE EXAM

Prerequisites for registering to the comprehensive exam:

- Fulfil the publication requirements presented in detail at the end of the chapter.
- During the first four semesters of the PhD programme obtain at least 90 credits and the minimum course credits specified in the academic plan of the doctoral school.
- In the case of individual doctoral candidates, who are not the students of the doctoral school yet, their registration to the comprehensive exam is accepted if they fulfil formally the publication requirements for obtaining the PhD degree (theses are not yet required when applying, so the content of the publications is not evaluated, just the fulfilment of the expected indicators).

One can register to the comprehensive exam by filling the registration form available on the doctoral school's homepage and submitting the form in the Dean's Office.

The comprehensive exam must be passed publicly, in front of a committee. The committee consists of at least three members. At least a third of the members is not employed by the institution operating the doctoral school. The committee chair is a university professor *or* a Professor Emeritus *or* a lecturer, researcher with a doctorate of the Hungarian Academy of Sciences. All members of the committee have scientific degrees. The examinee's supervisor cannot be a member of the committee. The exam committee is appointed by the Habilitation Committee and Doctoral Council (HBDT) of the respective scientific branch, in accordance with the university rules. The supervisor sends her/his evaluation of the student's performance to the chair of the committee.

The comprehensive exam has two parts: in the first part the committee measures the theoretical knowledge of the examinee („theoretical part), in the second part the examinee presents her/his scientific progression („dissertation part”).

In the theoretical part of the comprehensive exam the examinee takes the exam in a main and a second subject. The main subject covers a broader range of studies. The list of possible main subjects, their topics and the recommended literature is available on the web page of the doctoral school. Second subjects that can be chosen for the exam are specified in the academic plan of the doctoral school available on its web page. The student's main and second subjects are specified in advance by the DIT considering the recommendation of the student. In the theoretical part the PhD student presents her/his familiarity in the scientific literature of the respective field of science, and her/his theoretical and methodological knowledge.

In the second part of the comprehensive exam the examinee presents her/his knowledge of the scientific literature, research results and shows her/his research plans for the second part of the PhD studies in the form of a lecture, as well as the time plan for preparing the dissertation and publishing the results. The presentation should cover the scientific significance of her/his results and the innovative content, and – when relevant – the technological motivations of the research and the practical applicability of the results. The examinee submits to the committee

in electronic form, at least a week before the exam, a short summary of her/his achieved results that can be developed into theses, and her/his published articles and those submitted for publication.

Each member of the committee evaluates the subjects and the dissertation part separately. The evaluation is done by secret voting on a scale from 1 to 5. The exam of a subject is successful if the examinee reaches 70% of the corresponding maximum points. The comprehensive exam is successful if the committee judged all subjects and the dissertation part individually successful. If the examinee fails the comprehensive exam due to the failure of the theoretical part she/he can retake the unsuccessful subject(s) only once and only in the same exam period. If the dissertation part is unsuccessful, then she/he is not allowed to retake the comprehensive exam.

A report including a text evaluation is written about the comprehensive exam. The result of the exam is announced on the day of the oral exam.

The result of the comprehensive exam is not considered in the qualification of the PhD degree, but passing it is the condition for entering the second, dissertation part of the PhD studies.

Publication prerequisites for registering to the comprehensive exam

The student can register for the comprehensive exam if she/he has at least two submitted or accepted journal paper, at least one of which is in English.

V. COMPLETING THE STUDIES, THE ABSOLUTORIUM

By completing the second part of the PhD-studies the student obtains the absolutorium (=leaving certificate).

Obtaining the absolutorium requires that the student obtains the 240 credits in the PhD programme, between the upper and lower limits in each category specified in Section I. The absolutorium can be obtained in the 8th semester or earlier in one of the following procedures.

a) If at any time during the second part of the PhD programme the student prepares the PhD dissertation and fulfils all prerequisites to start the review process, then the student can submit the PhD dissertation to the HBDT and request from the HBDT the acceptance of the missing credits and the starting of the review process, independently of the previously earned credits. The student who fulfils all study and examination requirement and will have earned the 240 credits this way, and so, obtains the absolutorium on the day of the accepting decision of the HBDT. The student's legal status (and the eligibility for a scholarship in case of participation in a scholarship program) who obtains the absolutorium in this process remains active until the end of the semester when the dissertation was submitted (Nftv. 59.§ (1) d)).

b) A student who does not submit the dissertation to the HBDT until the end of the 8th active semester, must submit a final report by the end of the 8th active semester to obtain the absolutorium. The final report is the basis to earn the credits for the research work,

publication work and teaching activities in the last semester. The final report must be signed by the supervisor of the student and the head of the department, and it must be submitted to the Dean's Office by the end of the last semester.

VI. RESEARCH FIELDS

In the frame of the doctoral school there are three programmes, uniting the programs of the two preceding doctoral schools of the Faculty. The three programmes and their leaders are as follows:

Structural Civil Engineering:

Prof. László Dunai, university professor, corresponding member of the Hungarian Academy of Sciences

Infrastructure Civil Engineering:

Prof. János Józsa, university professor, member of the Hungarian Academy of Sciences

Surveying and Geoinformatics Engineering:

Prof. Lajos Völgyesi, university professor, corresponding member of the Hungarian Academy of Sciences

Two of the three programs, Structural Civil Engineering and Infrastructure Civil Engineering have – as their name implies – a civil engineering character, whereas the Surveying and Geoinformatics Engineering programme has an earth sciences character. The three programs are an integral continuation of the three MSc programs of the Faculty, offering and exploiting a considerable coherence between them.

It is important to highlight that, in line with international trends, the water engineering as well as the water and aquatic environmental engineering specializations are part of the infrastructure civil engineering programme. These two specialisations, especially through hydrology but also through various environmental and ecological subjects, have a strong link to earth sciences, which helps integrate the two fields of science. It is also noteworthy that, because the results of structural engineering related to structural mechanics and material behaviour modelling are beneficially used in biomechanics, the doctoral school offers research opportunities for solving structural mechanical problems in that field – with its own scientifically qualified lecturers and researchers.

The research topics offered in the programmes of the doctoral school are available on the school's web page, updated each semester.

VII. SUBJECT GROUPS

The subjects of the PhD programme are divided into three groups: basic subjects, specialisation subjects and elective subjects.

The grouping of the subjects is different in the three programmes. It is common for all of them that to complete the studies, students have to earn at least 12 credits from the basic subjects and at least 9 credits from the specialisation subjects. Accredited doctoral subjects of a different programme or different doctoral school (of BME or of another Hungarian university) are considered elective subjects. In case of courses completed abroad, the Council of the Doctoral School decides about the acceptance and the credits based on their syllabus.

Subjects may be announced every semester, every year or every two years, in Hungarian or in English. Details are specified in the PhD subject listing below.

In every programme there is a *compulsory* course on science philosophy or research methodology, for example an appropriate subject chosen from the programme of the BME Doctoral School of Philosophy and History of Science.

(Please consult the original Hungarian document for the listing of subjects. This list hasn't been translated yet.)