



# **DOCTORAL SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY**

## **Regulations**

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Responsible for maintenance: Head of the DS

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The Hungarian Accreditation Committee accredited the Doctoral School of Information Science and Technology (hereinafter DS) in 2001 as the successor of the Doctoral Program “Technical Applications of Information Technology” of the University of Pannonia (UP).

The core members of the Doctoral School of Information Science and Technology are:

- Ferenc Hartung, full professor, DSc (Head of the DS)
- Károly Bezdek, full professor, DSc
- György Dósa, full professor, DSc
- Katalin Hangos, professor emerita, DSc
- Mihály Pituk, full professor, DSc
- Cecília Sik-Lányi, full professor, DSc
- Zsolt Tuza, full professor, DSc
- László Czúni, associate professor, PhD
- Attila Magyar, associate professor, PhD
- István Vassányi, associate professor, dr. habil., PhD

The emeritus core members of the DS are:

- István Maros, professor emeritus, DSc

The present Regulations supplement the “Doctoral Rules” (accepted by the Senate of UP on February 27, 2023) and the “Habilitation Rules” (accepted by the Senate of UP on October 28, 2021). Regulations address the questions and procedures referred to the competence of doctoral schools, considering the special situation and characteristics of IT sciences.

Address of the DS:

Location: Faculty of Information Technology, University of Pannonia

Address: University of Pannonia

Doctoral School of Information Science and Technology

8201 Veszprém, Pf. 158

Telephone: +36 88 626421

Fax: +36 88 624526

Homepage: <http://www.mik.uni-pannon.hu/di>

E-mail: [di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu)

## **1. Composition and Activity of the Doctoral School Council**

1.1. The members of the Doctoral School Council (DSC), appointed by the University Doctoral and Habilitation Council (UDHC), are the following:

Head:	Ferenc Hartung, full professor, DSc
Internal members:	György Dósa, full professor, DSc Katalin Hangos, professor emerita, DSc László Czúni, associate professor, PhD
External members:	Zoltán Kató, full professor, DSc Gábor Szederkényi, full professor, DSc
Secretary:	Tibor Dulai, assistant professor, PhD
	A student representative delegated by the Doctoral Student Union.

1.2. DSC meetings are held as necessary but at least once a semester. Meetings address and decide on the issues falling within the competence of DSC.

1.3. Voting rights are given to the Head of the DSC, to internal and external members.

1.4. DSC makes its decisions by majority vote. In case of an equal number of votes, the vote of the Head decides. DSC has a quorum if at least two-thirds of members with voting rights are present.

1.5. DSC makes its decisions by public votes in general. Members with voting rights can request a secret vote in a reasonable case.

1.6. Meeting records are prepared during DSC meetings, made public for the lecturers and students of the DS within five workdays after the meeting, and stored in the DS Archives.

1.7. In a reasonable case, the Head of the DSC can propose an electronic vote by e-mail or online. Deadlines defined in Section 1.8 hold are still to be met in such cases.

1.8. Access for DSC members to materials related to making decisions must be provided at least two workdays before the meeting, which can be done electronically. Council members must be notified about the meeting's date and agenda at least five workdays before the meeting.

1.9. The DSC decides on the following issues (see Doctoral Rules of UP Section 5(7)):

- matters related to subjects (announcing a doctoral subject, accepting its syllabus, deciding on its credit value),
- matters related to the Comprehensive Exam / Doctoral Final Exam (the major and minor subjects and their syllabus),
- announcement of PhD topics for the Organized Program and accepting the supervisors,
- approving the working plans of PhD students in the Organized Program (the plan contains both the study plan and the research plan),
- approving working plan modifications of PhD students in the Organized Program,
- evaluating the applications for individual preparation (deciding whether the requested research topic belongs to the scope of the DS and if the minimum requirements for publication and language knowledge are met),
- evaluating the semi-annual reports of the PhD students in the Organized Program,
- approving the subjects for Comprehensive Exams and Doctoral Final Exams for the candidate,
- appointing the members of the Comprehensive Exam and public defense committees,
- evaluating applications for exam exemptions,
- managing the financial support available for the DS,
- evaluating public defense applications, appointing the opponents and members of the public defense committee.

1.10. The documents and certificates prescribed by the Doctoral Rules necessary for the DSC's decisions must be submitted to the DSC's secretary via e-mail ([di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu)) at least seven workdays before the meeting. A request form addressed to the Head of the DSC must also be attached. The only exceptions are documents to be submitted in printed form, see Section 2.5.

1.11. The DS maintains an online, digital archive to store all documents related to its activity and PhD students' matters.

## 2. Conditions for Obtaining a Doctoral Degree and the Doctoral Procedure

- 2.1. The Doctoral Rules of UP regulate the general conditions for obtaining a doctoral degree and the procedures. The DS regulates the minimum requirements for publication and language knowledge, the organization of the home defense and the preparation of the co-author declarations, considering the specific characteristics of IT.
- 2.2. The minimum publication requirement for obtaining a doctoral degree is **having two scientific papers published in international peer-reviewed journals with SCI impact factors**. These publications must be certified by presenting their reprints or the acceptance letters and manuscripts copies. Articles published must be registered in the Hungarian Scientific Bibliography (MTMT).
- 2.3. Meeting the minimum publication requirement is verified by the DSC when the PhD dissertation is submitted. If publication requirements are not met, the PhD dissertation may not be admitted to defense.
- 2.4. The minimum language knowledge requirement is English level B2, certified by a Hungarian state-administered language certificate of type C (combined) - or any equivalent accredited language exam.
- 2.5. The candidate initiates the Doctoral Procedure for obtaining a PhD degree by submitting the necessary application form to the DSC. The required attachments of the application, according to Section 13 of the Doctoral Rules of UP, are:
  - a) in paper form:
    - two identical printed and bound copies of the doctoral dissertation (its length without the appendix not exceeding 100 pages),
    - five Hungarian and five English copies of the theses booklet (abstract),
    - an official copy of each language exam certificate not already submitted during the DS enrolment process. The University's Directorate of Academic Affairs can also verify the original certificate.

b) in electronic (pdf) form:

- the doctoral dissertation,
- the theses booklet (abstract) in both Hungarian and English as separate files,
- the record and list of participants at the home defense,
- a Curriculum Vitae written in third person, maximum one page long,
- the list of publications related to the topic of the dissertation along with their reprints or the acceptance letters,
- a signed statement of non-foreign co-authors without a degree in IT or mathematics, in which they agree that the results presented in the joint publication may be part of the doctoral dissertation. PhD students co-authors also have to declare to what extent the results used are the contributions of the given candidate,
- a signed statement of the candidate declaring that the dissertation is of their own work and that the references are unambiguous and complete,
- a signed statement of the supervisor declaring that the dissertation meets scientific standards,
- the scanned proof of payment for the procedure fee,
- a signed application for admission to the defense.

2.6. The home defense of the doctoral dissertation takes place at the candidate's research center or a committee meeting of the Hungarian Academy of Sciences. Records are taken at the home defense, including all participants' names, workplaces, and scientific degrees. The head of the candidate's research center or that of the academic committee appoints two reviewers (opponents) with scientific degrees in the home defense. The opponents' written reviews are a required attachment to the records. At least two core members of the DS or two members of the DSC must be present at the home defense.

2.7. All lecturers and students of the DS are invited to the home defense and final defense.

2.8. The Doctoral Rules of UP regulate the public defense process. The DSC is responsible for appointing the two opponents and the reviewing committee. The public defense can be expected to take place five months after submitting the thesis.

### **3. PhD Students in the Organized Program (enrolled before September 1, 2016)**

- 3.1. A PhD student has to earn at least 180 credits during a 36 months period, as described in the Credit Regulations of the DS.
- 3.2. Credits for doctoral subjects completed in other doctoral schools (both Hungarian and foreign) can be accounted into the coursework credits. The DSC approves the completion based on the supervisor's support and the candidate's DSC-approved study plan. Subjects on the DS's recommended subjects list are approved automatically.
- 3.3. The completion of all the doctoral program requirements (receiving the "absolutorium") is verified by the Directorate of Academic Affairs of UP based on the Education System's data.
- 3.4. A PhD student can request the approval of the subjects selected for the Doctoral Final Exam ("szigorlat") and the appointment of the Exam Committee from the DSC once the required number of credits are earned. The request is to be sent to [di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu).
- 3.5. The Final Exam can be completed as part of the Program if all credit requirements are met, or before the dissertation submission deadline if the absolutorium was received.
- 3.6. The semi-annual reports of PhD students are mandatory subjects in the Doctoral Program. They consist of a mandatory written part and an oral presentation. The supervisor's written approval of the report is also required. It must be signed by both the student and the supervisor and submitted as a pdf to [di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu).
- 3.7. The semi-annual reports' oral part is held as a public mini-conference, where all the lecturers and students of the DS are invited. The Head of the DS Head may release the obligation of the oral report in case of the student staying abroad or having an illness.
- 3.8. The semi-annual report is reviewed by a committee appointed by the Head of the DS. Their written review is sent to the student, the supervisor(s), and the DSC members. Failure to complete the report, either by the lack of cooperation or by the committee's rejective decision, results in the student

losing their state-funded scholarship (meaning they can continue only in a self-founded status).

### **3A. PhD Students in the Organized Program (enrolled after September 1, 2016)**

3A.1. Those who have obtained a master's degree can be admitted to the doctoral program with a degree and professional qualification, as well as in doctoral training English general language and professional language knowledge is required for participation. The appropriate level of language knowledge can be certified with any of the following documents:

- a state-recognized, at least intermediate level (corresponding to level B2 of the European Reference Framework), complex type language exam or an equivalent document,
- international language certificate listed in Appendix 2 of the Doctoral Rules of UP,
- advanced level English language graduation exam taken during the two-level graduation system with a score of at least 45%, or an intermediate level of English language graduation exam with a result of at least 80%,
- language exam organized by the higher education institution,
- official certificate of at least one year of employment spent at a foreign workplace or at a multinational company in an English-speaking working environment,
- an international publication in English of at least 5 pages, published as an author/co-author, published within 5 years prior to the date of application.

3A.2. PhD students must earn 240 credits during a total of 8 semesters, as stated in Section 8 of the Doctoral Rules of UP. The Program is divided into two stages: the study-research stage (semesters no. 1-4) and the research-dissertation stage (semesters 5-8).

3A.3. Credits for doctoral subjects completed in other doctoral schools (both Hungarian and foreign) can be accounted into the coursework credits. The

DSC approves the completion based on the supervisor's support and the candidate's DSC-approved study plan. Subjects on the DS's recommended subjects list are approved automatically.

- 3A.4. The completion of all the doctoral program requirements (receiving the "absolutorium") is verified by the Directorate of Academic Affairs of UP based on the Education System's data.
- 3A.5. A PhD student can request the approval of the subjects selected for the Comprehensive Exam and the appointment of the Comprehensive Exam Committee from the DSC once the required number of credits are earned. The request is to be sent to [di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu).
- 3A.6. The semi-annual reports of PhD students are mandatory subjects in the Doctoral Program. They consist of a mandatory written part and an oral presentation in English. The supervisor's written approval of the report is also required. It must be signed by both the student and the supervisor and submitted as a pdf to [di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu).
- 3A.7. The semi-annual reports' oral part is held as a public mini-conference, where all the lecturers and students of the DS are invited. The Head of the DS Head may release the obligation of the oral report in case of the student staying abroad or having an illness.
- 3A.8. The semi-annual report is reviewed by a committee appointed by the Head of the DS. Their written review is sent to the student, the supervisor(s), and the DCS members. Failure to complete the report, either by the lack of cooperation or by the committee's rejective decision, results in the student losing their state-funded scholarship (meaning they can continue only in a self-founded status).
- 3A.9. The semi-annual report is reviewed by a committee appointed by the Head of the DS. Their written review is sent to the student, the supervisor(s), and the DSC members. Failure to complete the report, either by the lack of cooperation or by the committee's rejective decision, results in the student losing their state-funded scholarship (meaning they can continue only in a self-founded status).
- 3A.10. With the consent of the DSC, the research activity required for doctoral training can also be carried out at an external research site. Consent

cannot be refused in the case of an external supervisor. Study and reporting activities must also be carried out by doctoral students who have received such consent within the framework and according to the regulations of the DS.

#### **4. Comprehensive Exam**

- 4.1. Completing the Comprehensive Exam is a requirement for starting the research-dissertation stage of the Doctoral Program.
- 4.2. The requirement for taking the Comprehensive Exam is earning at least 90 credits in the first four semesters, including at least 30 credits from publications and 48 credits from coursework, along with completing the “Visiting the Comprehensive Exam” subject.

#### **5. Individual Preparation**

- 5.1. The application for individual preparation must be submitted to the DSC, following the requirements listed in Section 9 of the Doctoral Rules of UP. The application must also be sent in electronic form (as a pdf) to [di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu). The DSC examines whether the research topic is in the scope of the DS and if the minimum publication and language knowledge requirements are met. If not, the application is not supported.
- 5.2. The publication activity in the five-year-long period preceding the application must meet the minimum publication requirements. Time spent on parental leave in Hungary (GYES and GYED) does not count toward the five-year limit.
- 5.3. Enrolment for individual preparation requires the approval of the UDHC and the support of the DSC. The approval allows the Comprehensive Exam to be taken, which must be completed within six months after enrolment.
- 5.4. The enrolled student starts the research-dissertation stage of the Doctoral Program and will receive a student status upon completing the Comprehensive Exam.
- 5.5. The dissertation’s submission is regulated in Section 13 of the Doctoral Rules of UP and Section 2.5 of this current regulation.

5.6. Publications relevant to the research topic from the five-year-long period prior to the application can contribute towards the 120 publication credits required for the research-dissertation stage. The DSC verifies these publications, which must be registered in the Hungarian Scientific Bibliography (MTMT).

## **6. Supervisors and Consultants**

6.1. Supervisors in the DS and Consultants of PhD students doing individual preparation must have a scientific degree, be able to oversee scientific research, and have sufficient publication activity.

6.2. The DSC verifies the suitability of PhD student Supervisors in the Organized Program when the doctoral topic is announced. Consultants are reviewed as part of the verification procedure of applications for individual preparation enrolments.

6.3. The minimum publication requirement for Supervisors and Consultants is having two research papers published for each PhD student. These papers must be published in international peer-reviewed journals matching the scientific scope of the DS, within a five-year-long period prior to the appointment is made.

## **7. DS members - Core Members and Emeritus Core Members**

7.1. The list of DS members may change as necessary, based on the Core Members Committee's decision. The Head of DSC requests necessary appointments and discharges from the UDHC.

7.2. DS members have the right to announce doctoral subjects for PhD students in the Organized Program and to be supervisors or consultants of PhD students without further examination.

7.3. DS members are invited to the public defenses organized by the DS and to the oral part of the PhD students' semi-annual reports.

## **8. Habilitation**

8.1. The Disciplinary Doctoral and Habilitation Council

The University Doctoral and Habilitation Council (UDHC) has established the Disciplinary Doctoral and Habilitation Council of Information Science and Technology (DDHC-IST) based on the University's Habilitation Regulations by inviting and appointing the following members:

Head: Ferenc Hartung, full professor, DSc  
Internal members: Katalin Hangos, professor emerita, DSc  
György Dósa, full professor, DSc  
External members: Zoltán Kató, full professor, DSc  
Gábor Szederkényi, full professor, DSc

8.2. The habilitation procedure and its requirements are given in the University's Habilitation Regulations. The DS regulates the minimum publication and mentoring requirements with regards to the characteristics of the fields of IT.

### 8.3. Accepted disciplines for habilitation

The DDHC-IST accepts habilitation requests that fit the DS's research fields. These fields are listed on the homepage of the DS:

- Discrete structures and algorithms
- Dynamic systems and control
- Image and signal processing
- Medical and health informatics
- Optimization of large-scale systems and processes

The DDHC-IST decides in accepting requests related to other research topics. The habilitation request must precisely define the exact research field(s).

8.4. The University's Habilitation Regulations define the minimal publication requirements for the fields of IT as 50% of what is necessary for receiving a DSc degree. These requirements are interpreted as that given by the Section of Engineering Sciences of the Hungarian Academy of Sciences, which defines the expected quality and quantity publications and of the references (Q and I values).

The proof of meeting these requirements must be provided in the application by using the Tud-O-Méter software used by the Section of Engineering Sciences, available at

<http://www.hit.bme.hu/~ghorvath/tudometer/mtoscoring>.

Publications must be registered in the Hungarian Scientific Bibliography (MTMT).

- 8.5. A further publication requirement is that the candidate must have five publications in international peer-reviewed journals or high-level international conference proceedings within the research field defined in the application. The publications must be from the five-year-long period prior to the application. (This requirement meets that of the Hungarian Accreditation Committee for being a core member).
- 8.6. The minimal mentoring requirement is that the candidate is currently a supervisor or has at least one PhD student who graduated in the fields of IT (either as a supervisor or a co-supervisor).
- 8.7. The habilitation request and its appendices must be submitted to the Directorate of Academic Affairs in paper form, as given by the University's Habilitation Regulations, and in electronic form to the secretary of the DS at [di@virt.uni-pannon.hu](mailto:di@virt.uni-pannon.hu).
- 8.8. All the separate documents must be merged into one pdf file with a table of contents in electronic submissions. The detailed results of the Tud-O-Méter software for calculating the Q and I values (as given in Section 8.4) must also be provided.
- 8.9. The public lecture is to be held in Hungarian (English is allowed in justified cases, with the prior permission of the DSC), and the colloquium is in English. The habilitation theses are to be submitted both in Hungarian and English. The reviews are prepared in English.

## List of Abbreviations

DS	Doctoral School of Information Science and Technology
UP	University of Pannonia
DSC	Doctoral School Council
MTMT	Hungarian Scientific Bibliography - Magyar Tudományos Művek Tára
UDHC	University Doctoral and Habilitation Council
DDHC-IST	Disciplinary Doctoral and Habilitation Council of Information Science and Technology
IT	information technology

**Effective date:** April 1, 2023, for degree procedures with immediate effect.