



# Strategy of the Doctoral School of Applied Informatics and Applied Mathematics for 2025–2030

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## 1. Introduction

In January 2025, the Doctoral School of Applied Informatics and Applied Mathematics (hereinafter: AIAMD) formulated its strategic objectives and assigned indicators for the 2025–2030 period (hereinafter collectively: **strategy formulated based on independent quality goals**). The first step in creating the strategy was a strategic analysis, which included, on the one hand, an environmental analysis, such as the examination of the institutional, national, and international environment—with particular regard to current trends in scientific research and higher education; and on the other hand, a SWOT analysis, i.e., the identification of strengths, weaknesses, opportunities, and threats. Subsequently, categories and subcategories were established for the objectives, to each of which indicator(s) and corresponding measurement methodologies were assigned as shown in Table 1.

Subsequently, at its meeting on February 24, 2025, the University Doctoral and Habilitation Council (hereinafter: EDHT) decided on the quality goals of the EDHT for the year 2025. These quality goals were broken down to the AIAMD level and recorded in the document titled "Quality Objectives of the Doctoral School of Applied Informatics and Applied Mathematics for the 2025–2026 Academic Year." The incorporation of these quality goals into the strategic objectives of AIAMD for the 2025–2030 period took place in October 2025 (hereinafter collectively: **strategy formulated based on aligned quality goals**). To facilitate the uniform structure of this document, the strategic elements formulated based on aligned quality goals were broken down following the logic of the elements based on independent quality goals (category – subcategory – indicator – indicator measurement methodology) and were tabulated in a similar manner (Table 2).

It is a welcome development that the independent and aligned quality goals—and thus the strategic elements formulated based upon them—partially overlap. This confirms that the doctoral school and the supervisory body have operated based on a unified set of criteria, taking scientific excellence, transparency, and the prominent role of quality assurance as their foundation.

## 2. Strategy of AIAMDI 2025–2030

The Doctoral School of Applied Informatics and Applied Mathematics defines its operations for the period 2025–2030 based on a strategy built upon independent and aligned quality goals. The fundamental dimensions of the doctoral school's development are defined by adaptation and innovation. Our institution considers it a priority to flexibly adapt to the rapidly changing regulatory, technological, and social environment, ensured by the openness and adaptability of our research and teaching community. In the field of innovation, our goal is to introduce new educational methodologies aimed at enhancing the quality of scientific results and integrating sustainability considerations.

Our strategic objective is the continuous renewal of the curriculum, particularly the integration of environmental and sustainability topics into doctoral training. We intend to support this goal by developing the supporting infrastructure: we are establishing modern laboratories and research facilities, as well as organizing courses and workshops that ensure the deepening of doctoral students' professional competencies.

We are committed to expanding collaborations with industrial and academic partners. By encouraging joint research projects and through the diversified involvement of external funding sources – public, private, and international – we aim to enhance our international embeddedness and sustainable operations. Our efficiency goals include a steady increase in the number of publications and citations, the active involvement of students in research and teaching projects, the reduction of the dropout rate, and the improvement of student satisfaction. Our objective is to ensure the measurability and transparency of our operations while strengthening the visibility and reputation of the doctoral school through the enhancement of internal and external communication.

A key objective of the strategy is to increase the number of publications in D1, Q1, and Q2 rated journals among core members, supervisors, and students, with particular emphasis on strengthening the proportion of international publications. The doctoral school aims to improve the student pre-degree (absolutorium) completion rate. To ensure progress, it is a strategic requirement to track dissertation presentations in a time-phased manner, which serves as one of the key tools for measuring student performance.

A strategic objective aimed at reducing the dropout rate is the institutionalization of supervisory support, which is implemented through the maintenance of consultation logs, the development of a professional evaluator system, and the introduction of student peer-mentoring. Strategic tools for incentivizing publication performance include financial rewards, increased support for conference participation, and the maintenance of a system of non-monetary recognition—such as awards and prominent institutional publicity opportunities.

Furthermore, the strategy includes the regular monitoring of student research activities, ensured by semi-annual reports within the framework of a committee to be established in cooperation with the Doctoral Student Council. Strengthening international activity is also a key priority: we aim to increase the rate of student mobility, involve new international supervisors, and establish new domestic and international partnerships. A complementary element of this is the continuous expansion of the number of courses offered in foreign languages, which serves to enhance the international appeal of the doctoral school.

According to our strategic statement, the combined application of the system built upon independent and aligned quality goals guarantees that the operations of our Doctoral School in the coming years will be simultaneously flexibly adaptive, measurably effective, and internationally competitive.

### 3. Tabular Summary of the Strategy Based on Independent and Aligned Quality Goals

1. Table: Breakdown of the strategy formulated based on independent quality goals into category, subcategory, indicator, and indicator measurement methodology sections

Strategy formulated based on independent quality goals (Formulated in January 2025)			
Category	Subcategory	Indicator	Indicator Measurement Methodology
Strategic Objectives	<b>Adaptation:</b> enhancing the institution's capacity to adapt to rapidly changing environmental conditions.	Adaptation time to new regulations and technologies.	Measurement of time elapsed from the introduction of new procedures.
		Assessment of the adaptability of research and teaching staff.	Conducting annual surveys among research and teaching staff to measure the extent and efficiency of adaptation to new environmental and technological changes.
	<b>Innovation:</b> introducing new scientific and educational methods that promote the achievement of sustainability goals.	Number of new teaching and research methods introduced annually.	Tracking the number of innovative teaching and research projects.
		Market and scientific impact of new methods.	Measuring the impact of newly introduced methods based on related publication citations and market applications (e.g., patents).
	<b>Networking:</b> establishing strong international research and educational networks.	Number of new international collaborations.	Number of new partnership agreements concluded annually.
		Quality of joint publications and projects accessible through international networks.	Analysis of the results of joint international projects, including citation counts and the scientific prestige of collaborations.

Development Objectives	<b>Curriculum development:</b> integrating environmental and sustainability themes into doctoral programs.	Number of newly introduced sustainability-themed courses.	Annual tracking of the number of new courses.
	<b>Development of supporting infrastructure:</b> upgrading modern laboratories and research facilities.	Level of investment in infrastructure.	Number and budget of newly developed or renovated laboratories and research facilities.
	<b>Course development projects:</b> organizing specialized courses and workshops for doctoral students.	Number of doctoral students participating in the developed courses.	Collection and evaluation of participation data after each course.
Collaborations and Funding Applications	<b>Partnerships:</b> establishing collaborations with industrial and academic partners.	Number of joint research projects with industrial and academic partners.	Annual number of joint projects.
		Direct and indirect value generated by partnerships.	Analysis of funding and publication activities of joint research projects resulting from partnerships, as well as further opportunities realized through networking.
	<b>Grants and Proposals:</b> Attracting external funding sources for program development.	Amount of successfully secured external funding.	Total annual value of grants acquired.
Diversity and sustainability of funding.		Annual analysis of the types and amounts of funding sources, including	

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			public, private, and international sources.
Efficiency Objectives	<b>Research Efficiency</b>	Number of new publications.	Total number of new publications attributed to doctoral students in the given year.
		Number of citations.	Total number of new citations received in the given year by publications of doctoral school students.
		Number of research projects.	Number of students participating in research projects in a given year.
	<b>Educational Efficiency</b>	Doctoral student satisfaction.	Annual questionnaire-based survey
		Reducing student attrition.	The attrition rate in the given year.
Communication Objectives	<b>Internal communication:</b> regular information sharing for university staff and students.	Publishing reports on the doctoral school's results and achievements.	Number of reports published during the year.
		Organizing events to showcase student research.	Number of events organized to showcase student research in the given year.
	<b>External communication:</b> providing information to other doctoral schools and industry partners.	Participation in domestic and international events concerning doctoral education.	Number of appearances at events in the given year.

2. Table: Breakdown of the strategy formulated based on aligned quality goals into category, subcategory, indicator, and indicator measurement methodology sections.

Strategy formulated based on aligned quality goals. (Formulated in October 2025)			
Category	Subcategory	Indicator	Indicator Measurement Methodology
Quality publications	Increasing the number of D1-ranked quality publications.	A minimum of 3 D1-ranked quality publications among the publications of core members, supervisors, and instructors.	The point system applied in PhD degree completion and habilitation procedures.
	Increasing the number of Q1-Q2 ranked quality publications.	A minimum of 30 Q1-Q2 ranked quality publications among the publications of core members, supervisors, and instructors.	
		A minimum of 10 Q1-Q2 ranked quality publications among student publications.	
	Increasing the ratio of international (foreign) publications within the D1-Q1-Q2 ranked quality publications category.	Achieving a minimum 50% international (foreign) publication ratio within the Q2-ranked quality publications of core members, supervisors, and instructors.	
		Achieving a minimum 30% international (foreign) publication ratio within the Q2-ranked quality publications among student publications.	
Improving the PhD completion rate	Increasing the ratio of students reaching absolutorium (pre-degree certificate).	Achieving a pre-degree (absolutorium) completion rate of over 80% in organized training.	Measuring the number of students who have obtained the absolutorium (pre-degree certificate).

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		Achieving a pre-degree (absolutorium) completion rate of over 65% for students on the individual preparation track.	
	Time-phased monitoring of thesis development.	<p>Mandatory dissertation presentation one and a half years after the complex exam to assess the degree of progress.</p> <p>Mandatory dissertation presentation two and a half years after the complex exam to assess the degree of progress.</p>	Preparation of a progress report by the person reviewing the advancement.
Reducing student attrition	Strengthening doctoral supervision.	Mandatory maintenance of a consultation log each semester, with a minimum requirement of 4 consultation sessions.	Consultation log template
	Implementing the 'four-eyes principle' in doctoral supervision.	Six months after the complex exam, the AIAMD I appoints a "professional evaluator" for every student. This evaluator examines the student's research topic and progress; if they find the results insufficient or the advancement not time-proportional, they provide recommendations to the supervisor.	Professional evaluator template
	Implementing a student peer-mentoring system.	Students in the research and dissertation phase provide peer-mentoring support to first- and second-semester students. Launching a	Evaluation of the pilot program

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		pilot program in the upcoming academic year with 3 pairs of students.	
Publication performance of doctoral students	Introduction of financial incentives to encourage the publication activity of doctoral students.	Awarding a monthly publication bonus to the student with the highest number of publications in the preceding semester.	The point system applied in PhD degree completion and habilitation procedures.
		Awarding enhanced conference participation support to the student with the highest publication output in the preceding semester.	
	Introduction of non-financial incentives to encourage the publication activity of doctoral students.	Establishment and ceremonial presentation of the "AIAMDI Publication of the Year" award.	
		Featured recognition on the Doctoral School's website.	
Doctoral research activity	Providing administrative support from the Doctoral Student Council (DÖK) to the AIAMDI.	In accordance with the objective defined by the University Doctoral and Habilitation Council (EDHT), a Doctoral Research Activity Monitoring Committee shall be established within the framework of the Doctoral Student Council (DÖK). This committee will submit semi-annual reports on the research activities of AIAMDI PhD students to the AIAMDI.	Reporting template pre-defined by the President of the DÖK and the Head of the AIAMDI.
Enhancing international activity	Promoting and supporting PhD student mobility.	A 10% increase in the PhD student mobility rate compared to the previous year.	

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	Reaching out to new potential international supervisors through the network of EKIK (University Research and Innovation Center) research centers and research groups.	A 5% increase in the proportion of new international supervisors compared to the previous year.	
	Expanding partnerships	Reviewing existing partnerships, and terminating or renewing inactive collaborations.	
Establishing 1 new international and 2 new domestic partnerships.			
Increasing the number of doctoral courses taught in a foreign language by 5–10% compared to the previous year.	Engaging existing international supervisors within the AIAMDI to deliver doctoral courses.	A 5% increase in the number of doctoral courses offered in a foreign language compared to the previous year.	

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