

STRATEGY OF THE DOCTORAL SCHOOL ON SAFETY AND SECURITY SCIENCES (2025-30)



STRATEGY OF THE DOCTORAL SCHOOL OF SECURITY SCIENCES

Profile of the Doctoral School of Security Sciences

The Doctoral School of Security Sciences (BDI) of Óbuda University has been developing dynamically for years in terms of security science and related disciplines, and has unique qualities in many fields. This interdisciplinary field of science requires that the doctoral school provides the widest possible teaching and research background. Areas such as information security, the security of buildings and various operations, as well as a wide variety of technical (primarily mechanical) and economic sciences come into contact with each other. A special feature of the doctoral school is that the African Research Institute operates within its framework, with internationally recognized activities and supervisor instructors.

The long-term strategy of the BDI doctoral (PhD) training was formulated in line with the general development goals of Óbuda University. The aim is to encourage the development of the doctoral school, with special regard to the deepening of the special nature of the field of training and research, the strengthening of practice-oriented quality education and research, and the increase of international competitiveness. One of the fundamental directions of the development of doctoral training is to broaden the range of research programmes in the strategic research focus areas of Óbuda University, thus:

- Protection technologies
- Cybersecurity
- Robotics
- Security Science Technologies
- Safety Science Technologies

At the heart of the strategy is the "Internationally recognized doctoral training based on excellent supervision". Our goal is for the Doctoral School not only to award degrees, but to build a lifelong professional network, research skills and career for its students, while strengthening its position as one of the defining centers of Hungarian security science.

BDI'S DOCTORAL TRAINING MISSION AND VISION

The mission of the BDI doctoral program is to train researchers and higher education professionals who contribute to the growth of scientific knowledge and the promotion of innovation. Our long-term vision is to develop a doctoral education that is recognized at the European level, multi- and interdisciplinary, sufficiently open and sustainable. The immediate goal is to ensure the supply of scientific staff as part of safety science and to expand their innovation results.

BDI's MISSION: To educate the next generation of academics for the corporate, business and public sectors.

BDI's vision: To strengthen scientific research based on network cooperation based on the operation of the Doctoral School in the field of technical (and especially military-defense) sciences.

OBJECTIVES OF BDI'S TRAINING DEVELOPMENT BETWEEN 2025-30

A) Development of doctoral training

- In order to improve the efficiency and quality of doctoral training, it is justified to review the current training system regularly, at least every two years.
- After thorough preparation and careful analysis, it is necessary to develop a proposal that allows the merging of research areas in addition to efficient operation, in line with industrial technological development.
- It is necessary to develop the research and teaching methodology of doctoral training, and to develop and introduce the necessary methodologies and tools.
- In line with national and international trends, doctoral training must be transformed into a research-focused one, the proportion of research must be increased, and at the same time, the currently applied credit system must be reviewed.
- Conditions must be created for a significant increase in the range of interdisciplinary doctoral topics at the intersection of different disciplines and focusing on real social, technological or natural problems.
- Doctoral research topics should be related to a significantly larger proportion of existing research projects, primarily in the focus areas of the university's research.
- In order to broaden the background of doctoral training and increase its acceptance, a greater number of external (domestic and international) lecturers and supervisors should be involved in the training.
- Cooperation between doctoral training and the public, industrial and business sectors should be encouraged through the announcement of doctoral topics in this orientation and the involvement of external supervisors.
- The possibility of joint management of habilitation and doctoral activities according to the same principles should be explored in such a diverse field of research as safety science.
- The development of the organisational background of doctoral training and the improvement of the conditions of teaching and supervisors must be continued.

B) Increasing the international acceptance of doctoral training

- It is justified to develop English-language doctoral training, to develop answers to the introduction of hybrid and online doctoral training by developing pilot hybrid PhD modules.
- The conditions must be created for the regular invitation of renowned foreign guest lecturers and research professors.
- The number of doctoral topics announced under joint national and international supervision must be significantly increased.
- Double/joint doctoral degree programmes should be developed with international partner institutions.
- Encourage mobility by participating in exchange programmes abroad.

- The BDI International Doctoral Alumni Network *should be established and operated*, and the success stories of doctoral training should be made visible.

C) Supporting the career path of doctoral students

- In the case of methods and tools to be developed to support the activities of doctoral students, the characteristics of state-subsidized, self-financed and SH students must be taken into account.
- To develop and operate admission procedures that take into account the specificities of doctoral students applying from industry, the business and public sectors, as well as from the international field.
- Continuous development of the support system for doctoral students (scholarships, research grants, publication activities, participation in international conferences).
- Analysis of the reasons for dropout among doctoral students, reduction of the dropout rate.
- To promote the development of personalized research and professional development opportunities through targeted trainings and counselling services, with the support of the Student Welfare Center.
- It is necessary to further develop and increase the effectiveness of the research methodology and scientific communication courses organized for doctoral students, primarily but not exclusively in order to prepare students from industry, business and the public sector. To increase the attractiveness and visibility of doctoral training.
- It is necessary to develop a complex marketing strategy to increase the visibility and attractiveness of the doctoral training through the conscious and targeted use of modern internal and external communication platforms.
- Regular holding of a doctoral open day (for the first time in the 2025/26 academic year) in cooperation with the Student Union in order to promote doctoral training, extending it to English-language training as well.
- To promote training, the linking of common research topics, and the dissemination of good examples by further regular organization of BDI meetings.
- It is important to develop and operate an active national and international BDI Doctoral Alumni Program, as well as to make the success stories of doctoral training visible.

CONNECTION TO THE OBJECTIVES OF ÓBUDA UNIVERSITY

A) Practice-oriented teaching and research

- The development of the quality of PhD training ensures the maintenance and renewal of research standards.
- Cooperative doctoral programmes strengthen the transfer of knowledge to corporate and institutional partners and promote the deepening of practice-oriented research.
- The scientific succession program (of which doctoral training is a key part) is a guarantee of the creation of long-term teaching and research capacity.

B) International visibility and contacts

- The development of the international acceptance of doctoral training directly contributes to increasing the international presence of the University.
- The global embeddedness of the University is strengthened through English-language PhD programs, the reception of foreign professors and mobility opportunities.
- Double/joint doctoral degree programs broaden the international network of contacts.
- By developing the publication skills of doctoral students, a higher proportion of publications in prestigious international journals supports advancement in university rankings.

C) Improvement of operational efficiency

- With the help of doctoral training, increasing the qualification rate of university lecturers and researchers significantly contributes to the proper organizational operation and stability.
- Incorporating scientific considerations into management and development decisions improves the soundness and effectiveness of decisions.
- Satisfaction measurement (student, faculty, employee and partner)
- The development of the PhD student scholarship system improves the acceptance of doctoral training and reduces drop-out rates.
- Strengthening the motivation of doctoral students (publication support, helping them to participate in conferences) increases the appreciation of the training.
- Through cooperative doctoral programs, corporate and institutional partners are also more satisfied, as they can be directly involved in the research processes.

INDICATORS AND PERFORMANCE MEASUREMENT

Key indicators to measure the progress and effectiveness of BDI doctoral training include:

1. Strategic Axis: Outstanding Subject Leadership and Student Performance

Goal: To continuously develop supervision as the main strength and to ensure the successful and timely graduation of students.

The high quality of the training in the doctoral school is guaranteed by the scientific and educational activities of our lecturers. Faculty Officers/Supervisors include Academic Doctors and University Professors, and additional Faculty members hold Ph.D. degrees. One of our goals is to get as many of our lecturers as possible to obtain the title of habilitated doctor in the near future.

Our taught subjects have been compiled from the fields of engineering, safety technology and economics, in accordance with the multidisciplinary field of science. The list of subjects is reviewed every semester and we try to adapt to the changing needs of industry, academia and students.

Action plan:

Time: 1-2nd year: The structured "**Supervisor Satisfaction Survey**" will be introduced at annual frequency, and based on the supervisor evaluation, BDI will present the "**Supervisor of the Year**" award to one person each year.

Time: 1-3rd year: Organization of "**Supervisor Workshops**" on the topics of effective mentoring, conflict management and support for international students.

Time: Years 2-5: BDI introduces a "**Personalized Development Plan**" (IDP) for all new students, which is prepared in collaboration with the supervisor and updated annually.

Measurable targets (until 2030):

- The average satisfaction with supervisor support should reach 5.5 (on a scale of 1-6).
- Reduction of the average time to obtain a doctoral degree by 0.5 years.
- Increase the proportion of students who obtain a degree within 6 semesters after the complex exam from 70% to 85%.

Strategic Axis 2: International Perception and Visibility

Objective: *To strengthen the Doctoral School as a regional innovation center and to increase its international attractiveness.*

We try to be present at national and international conferences and events related to the topics and relevant disciplines of the doctoral school. We also consider it of primary importance that scientific publications be published in high-quality, recognized journals. In the coming years, in addition to the number of publications, we will place great emphasis on quality publications. We are also doing this with the aim of expanding our current international partnerships and taking them to a higher level.

Our continuous goal is to participate in international research projects and to be able to join research institutions operating in the same field. This is also facilitated by the integration of a large number of foreign students. Through them, we have the opportunity to collaborate with countless international researchers/research groups, so the doctoral school is still looking forward to welcoming foreign students with scholarships.

Action plan:

Time: 1-2nd year: Graduate with foreign PhD students to establish an international Alumni network and to develop an international Alumni Advisory Board.

Time 2-4 years: BDI announces an English-language "Summer School of Security Sciences" in thematic topics annually and launches it for international PhD students.

Time: 3rd-5th year: Conclusion of a "Double/Joint Degree" program agreement with at least 2 leading foreign universities.

Measurable targets (until 2030):

- Increasing the proportion of foreign students (SH, self-financing) to 25% of the number of students.
- 5 Establish new active collaborations with foreign universities/research centres.
- 50% of the students should be provided with at least 1 semester research stay at a partner institution in Hungary or abroad.

Strategic Axis 3: Innovative Research and Economic Impact

Objective: *To maximise the social and economic impact of research and to expand sustainable sources of funding.*

BDI continuously updates research topics and directions, and monitors current industrial and other user needs. It maintains constant contact with our existing industrial and academic partners not only in Hungary, but also internationally. He regularly examines the possibility of cooperation between diverse fields of science and the integration of new research results.

It also uses the developments in technical areas that have received special attention for years to support safety science applications.

Action plan:

Time: 1-2nd year: Organization of an "**Industrial Partner Day**" on an annual basis, where students present their research to leading companies.

Time: Years 2-4: Introduction of the elective subject "**Research and Development and Innovation**" in topics of particular interest to students, such as application writing, intellectual property and the establishment of start-up businesses.

Time 3-5 years: Establishment of a joint "**Research and Development Workshop**" with strategic industrial partners.

Measurable targets (until 2030):

- Increase the share of industry-funded research topics to 30%.
- 100% increase in the financial volume of the conference participation and publication costs submitted by students (base year: 2025).
- BDI's research results are 2 patents or other industrial protection applications per year by students and/or supervisors.

Strategic Axis 4: Community building and professional integration

Objective: *To develop a strong, cohesive and mutually supportive community of doctoral students who actively participate in scientific and professional life.*

The best way to find out about the employment and further progress of our graduates is based on personal feedback. In addition to a closed group on social media, it is necessary to maintain active contact between former and current students. The organized form of this has already been created by BDI (BDI Meetings), and its further development is still a priority task. It is important that more of the former students attend BDI events, so that there is an opportunity for further networking and collaborations.

Action plan:

Time: 1st year: **Strengthening the "BDI Doctoral Student Union"** (DÖK), strengthening and expanding formal rights in opinion formation and decision-making.

Time: 1-3rd year: Annual organization of a multidisciplinary "**BDI Conference**", where students and core members/supervisors present both and together.

Time: 2-5th year: Broadening the regular financial incentive and support system for students and strengthening professional representation in the management of MAB, HTE, MEE, WITSEC, IEEE and similar organizations.

Measurable targets (until 2030):

- Significant participation of at least 30% of students in the work of the management of professional organizations.

- Increase the number of academic and professional events (e.g. workshops, seminars) organised by students by 50% (base year: 2025).

Strategic Axis 5: Sustainable Resource Management and Infrastructure

Objective: To ensure modern research conditions and transparent operation.

To carry out a constant collection of information about the progress of students, monitoring and evaluating the quality of education, support and administration based on this. It is necessary to continuously evaluate the formal feedback sent by students and the opinions conveyed in reports, and to strengthen research and learning and improve the quality of training with constructive solutions.

Action plan:

Time: 1st-2nd year: launch of the "**Digital Doctoral School**" project: complete digitization of all administrative processes by creating a central student portal. To join the AI-Cloud digital campus services of Óbuda University in order to facilitate administrative administration.

Time: 2-4th year: Establishment of a "Research Infrastructure Development Fund" **from a central source**, from which students can apply for tools and equipment supporting research together with their supervisors.

Time 1-5th year: Elaboration and continuous implementation of the youth strategy of the core members.

Measurable targets (until 2030):

- 80% of student administration is handled digitally.
- Increase the indicator of satisfaction with the research infrastructure by at least 1 point (on a scale of 1-6, base year: 2025).
- Recruitment of 3 new core members under the age of 55.