



UNIVERSITY
OF PUBLIC
SERVICE
LUDOVIKA

IN THE SERVICE OF THE NATION

FWS



FACULTY OF WATER SCIENCES

CUM SCIENTIA PRO AQUIS HUNGARIAE!

FACULTY OF WATER SCIENCES

University of Public Service Water, governance, sustainability

The University of Public Service has been conceived as a comprehensive school of all major fields of the management of a modern state: public administration, defence, law enforcement and diplomacy. University of Public Service also boasts Hungary's oldest higher education institution dedicated to water: the Faculty of Water Sciences, located in the city of Baja on the banks of the river Danube. In recent years, the Faculty has significantly expanded its research and educational activities reaching out to the strategic, policy, legal and institutional dimensions of water. Importantly, the Faculty also serves as the official retraining institution of the Hungarian water authorities that offers students a unique access to the daily practice of water management in the broader Danube basin. Our MA programme has been developed by the Faculty's Department of Water and Environmental Policy, seated in Budapest, that specializes in water policies and governance.

Engineers at the service of sustainable development

The world economy is now driven by technology-intensive sectors, with water and environmental management having emerged in recent years. This is evidenced by the scale of capital flows into these two sectors and the continued demand for human resources in the form of well-trained specialist engineers. The supply of drinking water, sanitation, the use of renewable energy and the mitigation of water damage caused by extreme weather conditions have never been more in focus.

The Faculty of Water Sciences at the UPS is one of the traditional engineering schools in Hungary.

2017

The Faculty is a knowledge base for the water management sector, which has a long history of decades of working on water-related problems such as improving flood safety and at the same time ecosystem services in floodplains, preventing algal blooms in Lake Balaton, securing river navigation, combating desertification, avoiding urban flooding, developing digital water management solutions, solving border water conflicts through water diplomacy or removing microplastics from our water systems.

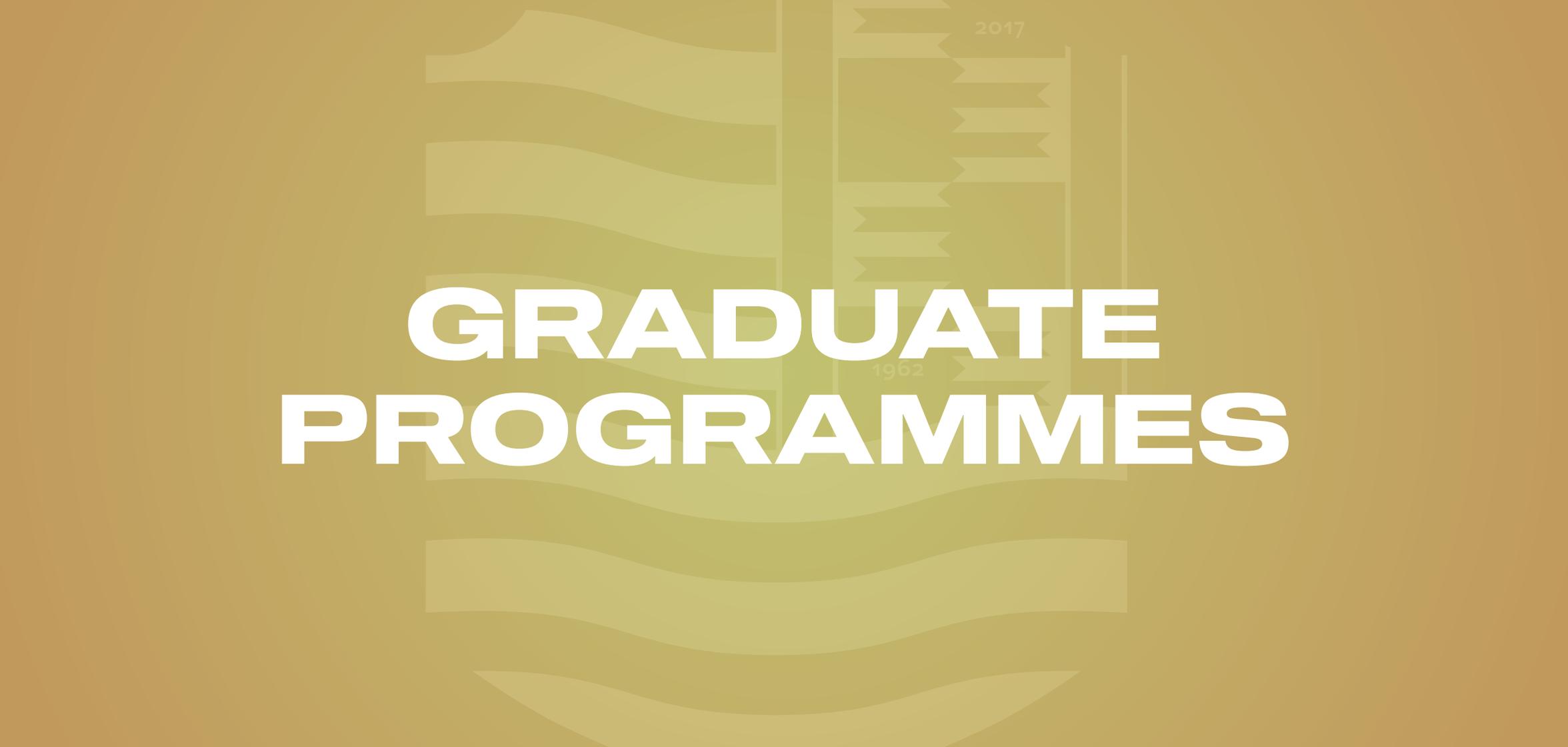
The bachelor's degree programmes in Civil engineering, Environmental Engineering, Water Operation Engineering and master's degree programme in water diplomacy at UPS train professionals to address the most significant environmental and social challenges of the 21st century, the water scarcity induced by global climate change and the complex policies and governance of water management.

The location of the BSc training courses is Baja, where the University has a well-developed educational infrastructure - with facilities for teaching water technology, laboratories, a constantly expanding range of measuring equipment - and a well-equipped, modern dormitory on the banks of a Danube branch (Sugovica) with a multifunctional student space and a sports field for leisure activities.

The MA programme is based at the modern but traditional Ludovika Campus in Budapest.

The Faculty of Water Sciences also includes field stations in the East Mecsek, in Magyar-egregy and on the Danube in Érsekcsanád, which serve as a research site for catchment hydrology and practical training location in measuring large water bodies.

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The background features a light brown color with faint, stylized wavy lines and a vertical timeline. The timeline includes the years 1962 and 2017. The main text is centered and reads "GRADUATE PROGRAMMES".

GRADUATE PROGRAMMES

BACHELOR OF CIVIL ENGINEERING

The aim of the 8-semester course is to produce well-prepared, creative-minded civil engineers, open to innovation, capable of carrying out the construction, maintenance and operation of infrastructure, as well as the tasks of contracting and technical supervision, and of independently managing the design and development processes involved in the course.

After graduation, they will be able to find employment in both the public and private sectors. This is where the water management sector is specifically looking for new recruits.

Students can choose from the following specializations:

Regional water management specialization

The main components of the knowledge of water management and hydraulic engineering are: flood protection, water management, water resources management, river basin management, catchment hydrology, river management, water utilization, with particular emphasis on agricultural water utilization, irrigation, reser-



voir management, flood control, hydrometry and the relevant directives of the European Union. In addition to operational issues, students also learn about design and monitoring tasks. In the specialization, they acquire specialized knowledge on methods of dealing with water damage management related to floods, inland excess water, droughts and water quality. Participants are also trained in practice in flood protection, field surveying and hydrometry measurements.

Main subjects: Agricultural water utilization; flood protection; Lowland and hill water management; river management; river basin management.

Civil engineers graduating from this specialization most often start their careers in the public administration at regional water authorities or in the civil sector in design and construction companies (e.g. as construction managers, development engineers).

After successful completion of the training, they can obtain a license to design and perform expert activities in the fields of water management and water resources management at the Hungarian Chamber of Engineers.

Those wishing to continue their studies can easily find the right course for them, both full-time and part-time.

Specialization in Water Supply and Sewerage

Students learn about the equipment and processes involved in the supply, drainage, treatment and utilization of water in municipalities and industrial establishments, as well as the practical tasks involved. They will acquire the mechanical and control engineering skills required to operate the systems, the use of professional software and the relevant legal regulations.

Students choosing the specialization in Water Supply and Sewerage learn about the most important issues of drinking water safety and wastewater treatment, and develop their theoretical knowledge and professional competence in the field of water ecosystem protection.

Main subjects: water supply; water supply and treatment; sewerage; design and operation of wastewater treatment; treatment of water and wastewater sludge; water technology machinery; Computer-aided utility design; management of water technology processes.

On completion of this specialization, graduates may be appointed to a number of posts, including regional or branch manager, water and wastewater treatment plant manager, manager of the operation of a public drinking water network or wastewater network, manager of internal water quality control. In the competitive sector, civil engineers with both theoretical and practical knowledge are favoured by companies designing and building public utility infrastructure. Students graduating from the specialization can obtain a municipal water utility planning license from the Hungarian Chamber of Engineers.



BACHELOR OF ENVIRONMENTAL ENGINEERING

The aim of the 7-semester course is to train environmental engineers with up-to-date scientific, ecological, technical, socio-economic and management skills who are able to identify environmental hazards in different areas and to manage damage control activities. Here again, the focus is on water, with a stress on mitigating global environmental problems, in particular the water crisis.





Students can choose from the following specializations:

Specialization in water and wastewater treatment

In this specialization the students get familiar with the technological and practical knowledge in connection to the operation of plants and systems in the field of water supply and sewerage. The chemical-biological processes of water and wastewater treatment, as well as the fundamentals of engineering and control technology, are emphasised.

Measurement exercises associated with the training are carried out in the training centre, equipped with state-of-the-art water and wastewater technology model equipment and biological and chemical laboratories, as well as on external sites.

Main subjects: water utility networks; water supply and treatment; design and operation of wastewater treatment plants; water and wastewater sludge treatment; water and wastewater treatment plants.

After completing the specialization, graduates can take on jobs such as regional or sectoral manager, water and wastewater treatment plant manager, manager of the operation of a public drinking water network or wastewater network, manager of internal water quality control. Engineers and environmental engineering specialists in the competitive sector usually gain a significant existence. Graduates can obtain several types of expert status (e.g. waste management, air pollution control, water and soil protection) from the Hungarian Chamber of Engineers.

2017

Specialization in Water Management

Students learn about flood management and inland water drainage, river regulation, lowland and hillslope water management and agricultural water utilization facilities, and master the methods of river basin management, nature protection aspect engineering and wetland reconstruction. They are trained in practice in hydrometry and hydro-ecological monitoring methods in field measurement exercises.

Main subjects: river basin management; urban water management; lowland and hilly water management; protection of the aquatic environment; Conservation, management and reconstruction of wetlands.

Our environmental engineers graduating from this specialization most often start their careers in the public administration at regional water authorities or in the civil sector in design and construction companies. Graduates can obtain a qualification as an expert in the field of water protection after acquiring the necessary practical experience.

Those wishing to continue their studies can easily find the right course for them, both full-time and part-time.

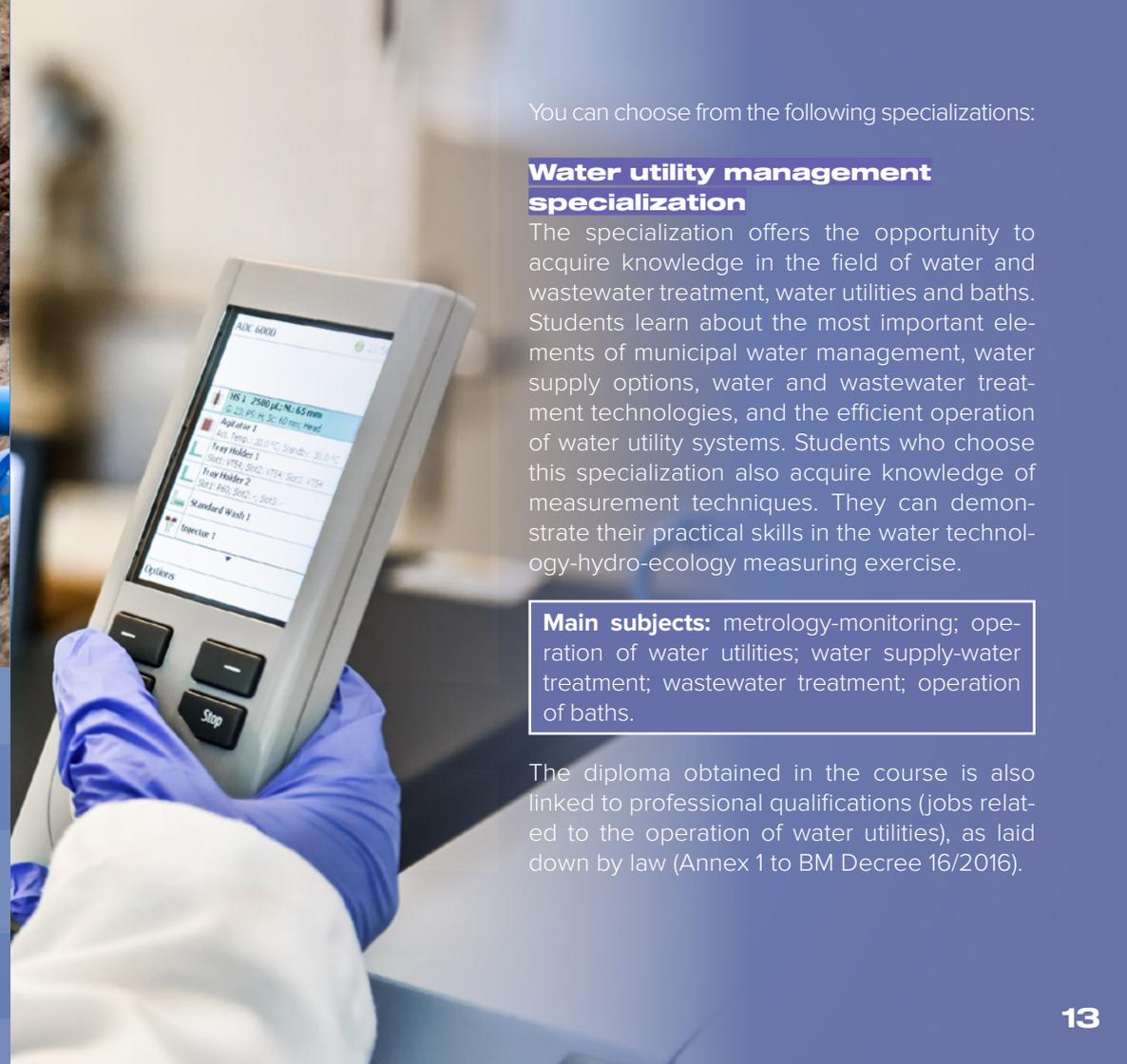
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BACHELOR OF SCIENCE IN WATER OPERATION ENGINEERING

The aim of the 6 semester is to train water operation engineers with modern technical and management skills, who are able to perform the commissioning and operating tasks of regional and municipal water management facilities, and to carry out the commissioning and operating tasks of water management facilities in the corresponding engineering field, having the operator's licence.



You can choose from the following specializations:

Water utility management specialization

The specialization offers the opportunity to acquire knowledge in the field of water and wastewater treatment, water utilities and baths. Students learn about the most important elements of municipal water management, water supply options, water and wastewater treatment technologies, and the efficient operation of water utility systems. Students who choose this specialization also acquire knowledge of measurement techniques. They can demonstrate their practical skills in the water technology-hydro-ecology measuring exercise.

Main subjects: metrology-monitoring; operation of water utilities; water supply-water treatment; wastewater treatment; operation of baths.

The diploma obtained in the course is also linked to professional qualifications (jobs related to the operation of water utilities), as laid down by law (Annex 1 to BM Decree 16/2016).

Hydrogeology, water acquisition specialization

The specialization in hydrogeology and water acquisition introduces students to applied hydrogeology, karst hydrogeology, hydrodynamic modelling of groundwater and water management.

Main subject: Hydrogeology; Karst hydrogeology; Groundwater management; Water acquisition and hydrodynamic modelling of groundwater.

Specialization in regional water management

The specialization in regional water management covers water resources management and hydrometry, lowland and hilly water management, agricultural water utilization, flood protection and river management.

Main subjects: River basin management; Agricultural water utilization; Conservation, management and reconstruction of wetlands; Hillslope water management; Lowland water management; Flood protection and River management.

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2017

MA PROGRAMME

MA IN INTERNATIONAL WATER GOVERNANCE AND WATER DIPLOMACY

Training location: Ludovika Campus, Budapest

The two year MA programme in International Water Governance and Water Diplomacy, starting September 2020, offers up-to-date, practice-oriented education for practicing and future water managers, diplomats, national and international civil servants engaged in transboundary or global environmental issues. Based on a blend of natural and social sciences, extensive field training and project-based team work, the programme is aimed to enable students to master complex water policy challenges, decision and conflict situations.

The aim of the 4-semester training is to produce Hungarian and foreign experts who, with the knowledge they have acquired, are able to carry out international tasks in international, EU and national water management organisations.

Why study international water governance and diplomacy?

While water war theories have been a popular feature of international politics for decades, reality shows that even bitter interstate tensions surrounding water tend to become a source of cooperation rather than conflict. The potent megatrends of our era, such as demographic change, urbanization or climate change, however, create new pressures on how countries manage water domestically and in their international relations. Scientific consensus suggests that the current water crisis is a crisis of governance. The root of the problem, therefore, lies not necessarily in the limited availability of water. Rather, how laws, policy and financial decisions on water are made, implemented and followed up by government and society. Such challenges surface with even greater force in interstate context where the action or inaction of a country may give rise to disproportionate negative impacts on the water resources available to others. Consequently, the knowledge of how to prevent, manage and resolve water conflicts at the domestic and international level will be a critical asset for the prosperity and stability of any nation in the 21st century.





Structure and content of the MA programme comprises five broad knowledge clusters as follows (detailed programme see below):

- General questions of water management provides an introduction to the scientific and technical fundamentals of water governance: hydrology, integrated water resources management and environmental/sustainability challenges of water policy,
- Introduction to water governance and conflict management covers the institutions, politics and economics of water governance from a general perspective. It also touches upon the fundamentals of decision-systems, conflict management and communication,
- Water law comprises three different courses dedicated to the legal regulation of water at national, international and European Union level,
- International water governance focuses on theoretical, political and institutional questions of water governance (safe conflict resolution). It also provides an introduction to water project management from an international perspective,
- Water diplomacy and international conflict management is dedicated to the prevention and resolution of water-related interstate conflicts and disputes. It also covers a general introduction to diplomacy and the military dimensions of water.

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SCHOLARSHIPS, ADMISSION REQUIREMENTS

The general admission requirements apply to the courses offered by the Faculty. The faculty's website always provide up-to-date information on the courses offered. The minimum number of credits required for admission to our Master's programme is 60 credits based on previous studies in the following fields: political science, law, engineering, water management, economics, natural sciences, social sciences, international studies.

Erasmus+

Erasmus+ is the EU's programme to support education, training, youth and sport in Europe. It provides opportunities for over 4 million Europeans to study, train, and gain experience abroad. Erasmus+ is the best-known scholarship programme enabling the international mobility of HEI students as well as academic and administrative staff providing opportunities for both European and non-European participants and HEIs.

Studying abroad is a central part of Erasmus+ and has been shown to have a positive effect on later job prospects. It is also an opportunity to improve language skills, gain self-confidence and independence and immerse yourself in a new culture. Erasmus+ also offers the chance to combine studying abroad with a traineeship. Opportunities are available for students at Bachelor, Master or Doctoral levels.

The main types of scholarship for students: Study abroad: students can spend one or two semesters in a foreign higher education institution without paying tuition fees or going through the application procedures designed for full degree students, and the credits earned at the foreign institution are recognised at their home institution.

Student traineeship (internship): students can get scholarship to conduct an internship at a chosen company, institution, organisation or embassy with a period of 3 to 12 months.

Stipendium Hungaricum

The Stipendium Hungaricum program is a scholarship based on cooperation between universities and governments, whereby students benefit from tuition-free fees for the entire duration of their studies. In addition, their accommodation is provided by the scholarship programme in the Beszédes József dormitory in Baja. Scholarship winners will also receive a regular monthly discretionary cash grant and health care services according to the relevant Hungarian legislation and supplementary medical insurance. The programme is available in more than 90 countries on 5 continents, reaching around 5000 students per year.

The programme was founded by the Hungarian Government in 2013, it is supervised by the Ministry of Foreign Affairs and Trade and managed by the Tempus Public Foundation.

Students at Risk

Within the framework of the Stipendium Hungaricum programme, a so-called Students at Risk scholarship subprogramme was also organised. This programme is specifically aimed at students who are facing difficulties due to the current situation in Ukraine. Hungary is thus able to help talented students with Ukrainian citizenship and those who have studied in Ukraine but have another citizenship.



Diaspora Scholarship

Diaspora Higher Education Scholarship Programme scholarship holders can apply for Hungarian and English language courses awarded by the institutions participating in the Stipendium Hungaricum programme. As the main objective of this type of scholarship is to support diaspora communities through the scholarship holders, the scholarship programme will primarily focus on training courses that will enable graduates to support the work of Hungarian diaspora communities. Valid student applications may be submitted by applicants who have Hungarian roots, live in the diaspora and are foreign nationals. In addition, applicants who are recommended by a Hungarian diplomatic mission accredited in the country concerned or by a diaspora organisation operating in the country concerned, or who, with the individual consent of the Minister, are supported by an institution participating in the scholarship programme.

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Scholarship Programme for Christian Young People

The Scholarship Programme for Christian Young People was founded by the Government of Hungary, in solidarity with persecuted Christian religious minorities of solidarity with Christian communities. Government Decree No. 120 (2014), for the operation of which it is responsible for the support of persecuted Christians and the Hungary Helps programme, whose Ministry, with the assistance of the Tempus Public Foundation, is responsible for the implementation of the Scholarship Programme. The aim of the scholarship is to enable young Christians living in crisis regions of the world to pursue higher education in Hungary, who are facing religious persecution, threats to Christians in their home countries or are at risk of being or face restrictions on their freedom to practise their religion, in order to contribute to the return of Christians to their countries.



STUDENT LIFE

The University Students' Union (EHÖK) organises a number of events to enrich the students' everyday life. The annual Freshers' Camp and the Freshers' Ball contribute to the integration of first-year students into the university community. Ring-ceremony for graduating seniors, „halves” and other events are also very popular with university citizens. The EHÖK is also involved in the organisation of many other cultural and leisure activities. On the academic side, university citizens can choose from a wide range of conferences, workshops and other professional programmes organised by departments, scientific student clubs and professional colleges throughout the year. The primary mission of the Faculty of Water Sciences Student Council is to represent the interests of students, to solve problems and to ensure proper communication between the faculty management and students. It is involved in the provision of scholarships, the organisation of cultural programmes and the revitalisation of university life. The proximity of water provides the students of the Faculty of Water Sciences with special experiences. The Danube, its estuaries and the Gemenc Forest provide students with a wonderful environment that will stay with them for decades.



**University of Public Service
Faculty of Water Sciences**

International Department:
Eszter Bonyai, Head of Department
Phone: +36 30 160 6459

International coordinator (academic issues):
Dr. Enikő Anna Tamás, Associate Professor

E-mail: international.fws@uni-nke.hu
Web address: <https://en.uni-nke.hu/faculties/faculty-of-water-sciences/about>



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