



NATIONAL UNIVERSITY OF PUBLIC SERVICE  
FACULTY OF WATER SCIENCES

## FACULTY OF WATER SCIENCES

### A growing talent pool for the water sector in Hungary and beyond

The water management of the future will fundamentally define the world's and Hungary's development, economic performance, food security, environmental status and the quality of the population's life. The availability of water in adequate quantity and quality and the protection from water damage make water management a strategic sector, with engineering and water diplomacy knowledge being among the most important values of our time.

The Faculty of Water Sciences is the youngest faculty of the National University of Public Service, beginning its operation in Baja on 1 February 2017. Thanks to our predecessors, the Faculty has a heritage of over 50 years in higher education. Water science education in Baja has nationwide significance and appreciation.

The educational building of the Faculty is located in one of the most scenic areas of Baja, where the university provides training on modern water management procedures in its facilities and laboratories. Our Faculty has two measuring stations, one in the Eastern Mecsek area, one in Érsekcsanád, which both serve as field training facilities. We provide modern technology and measuring instruments that our students can use to acquire practical knowledge. We also offer accommodation to our students in the dormitory.

In the Civil Engineering and Environmental Engineering degree programmes of NUPS, students are trained to answer the greatest environmental and social challenges of the 21st century and to handle the problems of water shortage and water management.



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## BACHELOR DEGREE PROGRAMMES

### CIVIL ENGINEERING (BSC)

The purpose of the programme is to train engineers with appropriate foreign language knowledge and skills that will enable them to fulfil tasks related to construction, maintenance, operation, management and professional administration. Graduates will be qualified to manage simple planning and research tasks independently and cooperate in the execution of more complex projects.

#### We offer the following specialisations:

##### Regional Water Management Specialisation

The main components of classical water management and water related know-how include: flood control, drainage, water resource management, river basin manage-

ment, river basin exploration, river regulation and water utilization, including agricultural water utilization, irrigation, storage, hydrography and EU directives. In addition to operational questions, students can also become acquainted with planning and monitoring tasks. The specialisation offers training on water damage prevention, including the management of floods, inland waters, droughts and special knowledge on water quality prevention. The students are introduced to the world of flood control, geodesy and hydrometry during practical sessions in the field.

##### Water Supply and Wastewater Treatment Specialisation

The specialisation aims to train students to become experts of the toolkits, processes and practical tasks of settlements, industrial facilities' water supply, water drainage, treatment and utilization.

They can acquire the necessary mechanical, engineering and operating software related knowledge, including the relevant legal environment. The specialisation offers training on drinking water security and disaster prevention, fun-



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damentals of environmental damage prevention, major water damage prevention techniques, groundwater and groundwater remediation technologies and protection of aquatic ecosystems.

### ENVIRONMENTAL ENGINEERING (BSC)

The aim of the programme is to train environmental engineers with up-to-date skills in ecology, technology, economics and management, enabling them to be able to detect environmental risks in different areas and manage damage control activities.

**We offer the following specialisations:**

#### Water Treatment - Wastewater Treatment Specialisation

In this specialisation students can acquire practical knowledge on the technology and operation of facilities and systems in water supply and wastewater. We focus on the chemical and biological processes of water and wastewater treatment as well as on the basics of engineering essential for practicing the profession. Our training practices are conducted in our educational building equipped with modern water and wastewater technology model equipment, biological and chemical laboratories as well as in external locations.

#### Water Management Specialisation

The specialisation offers training on flood and inland water protection, river regulation, watershed control techniques in flatland and hilly areas and agricultural water management. Students are introduced to the engineering processes used for drainage in harmony with nature and wetland restoration. During field measurements students can also learn about hydrometry and hydropower monitoring methods.





## FURTHER SPECIALISED TRAININGS

### ENGINEER SPECIALISATION IN FLOOD AND DRAINAGE CONTROL

Graduates are able to perform on-site operational management of flood and drainage control tasks, to execute the specialized tasks of the control organisation and to resolve development challenges in flood and excess water protection. They also acquire the knowledge required for the high-level performance of the special tasks in connection with the professional authorities and for the execution of planning, professional, technical inspector activities and eligibility in the area of flood and drainage control.

### WATER MANAGEMENT ENGINEER SPECIALISATION IN NATURE CONSERVATION

The aim of the training is to widen the knowledge of the students with modern general and professional nature conservation and water management skills. After completing the course, engineers with professional qualifications will be able to handle the water challenges in the field of nature conservation and the management of nature conservation issues in the field of water management, as well as to execute design, supervising and operational tasks by providing high quality assurance as a response to the ever increasing demands and needs.

### ENGINEER SPECIALISATION IN WATER ECONOMY

The aim of the programme is to train professionals in the field of business and public administration in order to be able to solve the economic problems that arise in their work either independently or as a valuable member of an expert team. Graduates with theoretical and practical knowledge can perform managerial tasks in the design, construction, operation, development and abandonment phases of high-tech facilities, especially in the various fields of the water sector.

The modules of the postgraduate programme are built to fully meet the unique training needs of those who wish to expand their skills before entering or re-entering the labour market, in order to make it easier and faster to build a career.



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### ENGINEER SPECIALISATION IN HYDROGRAPHY

The aim of the training is to widen the knowledge of students with modern general and professional skills in the field of hydrography.

This course offers graduate engineers knowledge and skills related to hydrography. Graduates will be qualified to take on the actual challenges in hydrography, design and operate measurement and monitoring systems as well as to collect and analyse data, manage databases by meeting the high standards and address growing demands.

### ENGINEER SPECIALISATION IN WATER SUPPLY AND WASTEWATER TREATMENT

The course focuses on conventional and modern technologies in water supply and wastewater management, design and operational expertise in water utility management and expertise in aspects of engineering economics and law necessary for water utility management. The specialisation includes training in modern utility management, key control mechanics and algorithms, technical, economical, public health and legal knowledge which are required to operate, as well as related water management theories and EU directives. The degree programme offers professional licences to operate based on legal requirements (16/2016 BM, Annex 1).



## TALENT MANAGEMENT

The university provides several special colleges which serve as intellectual and social platforms to help the development of the motivated and dedicated students. The Zsuffa István Special College of the Faculty of Water Sciences aims to provide students with a series of programmes, primarily in engineering, that help develop their knowledge outside of the regular university classes. In addition to the higher education, the college places great emphasis on active participation in professional conferences, forums, community and cultural programs as well as in the National Conference of Scientific Students' Associations. Members of the special college are continuously assisting and participating in other scientific events. To acquire and maintain the qualification of the special college, it is important for the students to contribute to the Researchers' Night or to be involved in the Youth Days organised by the Hungarian Hydrological Society (HHS). The special college also maintains a good relationship with numerous local organisations, including the Hajómalom Association of Baja and the Settlement Commission of Baja.

## EMPLOYMENT POSSIBILITIES

Due to the strategic role of water, the labour market demand for students graduated at our Faculty is continuously high. With the help of the wide range of profession-



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al contacts that we provide, our graduates are generally offered a job within a year of their graduation. In Hungary the supply of professionals within the water sector is primarily provided by the Faculty of Water Sciences, thus the qualification obtained at the faculty guarantees the employment in the water sector.

## STUDENT LIFE

The main student organisation of the National University of Public Service is continuously offering diverse and vibrant programmes to bring together the students of its faculties and institutions. The Freshman's Camp and the Freshman Ball are the symbolic event of students' inauguration. Other balls and events are also very popular among the students, especially the ceremonial farewell of graduates who are awarded with the University Ring. The students' association is also involved in the organisation of numerous cultural and recreation events.

Our university provides opportunity for the students to participate in a wide range of scientific conferences, workshops and other professional programs organized throughout the year by faculties, scientific students' associations and special colleges. The main objective of the Students' Union of the Faculty of Water Sciences is to represent the students' interest, solving the arising problems and ensuring the right communication between the faculty and the students. The Union also cooperates in scholarship distribution and participates in the organisation of cultural events and promotes student life at the university.



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**Further information:**

<https://en.uni-nke.hu/about-nups/faculties-and-institutes/faculty-of-water-sciences>