



CALL FOR APPLICATION

PhD Students

Hydraulics

2024-2025

We are pleased to inform PhD students that we have two (02) students Mobility for Studies under Erasmus+ KA171, which is pursued by the Inter-Institutional Agreement (IIA) between UNIVERSITE OF BISKRA and UNIVERSITY OF RUSE ANGEL KANCHEV(Bulgaria). The nominated applicants will spend four (04) months at the receiving institution during the second semester 2024-2025.

The program supports people with exceptional needs to participate in the call for applications.

✚ Required Steps:

1. Check the list of needed domains on the second page of the call,
2. Applicants should not have previously benefited from a mobility grant,
2. The applicant should have at least B1 in English,
3. Submit your candidature before the deadlines,

Submit your application through: [Ruse University](#)

- Submission deadline: November 16, 2024 (23:59),
- Files review date: November 17, 2024.
- The nomination list is due on November 28, 2024.

Remark: Travel support: 309 Euro and 800 Euro per month (after arriving at Ruse University).

The shortlisted applicants will bear their own travel expenses.

For more details, do not hesitate to email the Erasmus+ Officer at Biskra University
Mr. Mohammed MOUMMI --- mohamed.moumми@univ-biskra.dz



List of research topics selected for doctoral student mobility under the ERASMUS + programme

1- Hydraulic structures and free-surface flows

- Theoretical and experimental study of hydraulic structures.
- Theoretical and experimental studies of flows in channels and stilling basins of dams.
- Optimisation of the performance of spillways through experimentation on physical scale models and numerical modelling using the Flow3D code,
- Development of a shape of spillways allowing both an increase in the discharge capacity and an increase in the storage capacity of existing dams.
- Study of free-surface flows through experimentation on physical models and numerical simulation (CFD).
- Study of closed-conduit flow using experiments on physical models and numerical simulation (CFD).

2- Renewable energy storage.

- Renewable energy sources.
- Storage of renewable energy by hydroelectric means
- Study of the energy performance of tidal turbines,

3- Hydraulic pumps

- Energy efficiency of pump and fan systems used to transport fluids.
- Studying pipe systems by applying dimensional analysis.
- CFD modelling of pipe systems used to transport fluids.
- CFD modelling of turbopumps and fans.
- Numerical modelling of heat transfer processes in heating installations.
- Modelling and research of rotary hydrostatic pumps and motors (positive displacement hydraulic machines).

4- Technical management of water systems

- Hydraulic modelling and integrated water resource management
- Technical diagnostics and improving the reliability of drinking water supply systems.
- Technological improvement of water distribution systems and technical management of networks.
- Development of a management and optimisation model for groundwater exploitation.

5- Waters and wastewater treatment

- Study of a new ecological wastewater treatment technique using planted filters (phytopurification).
- Evaluation of biological and physico-chemical indicators of wastewater pollution in discharges from urban agglomerations.
- Improving the performance of water treatment materials and reagents.
- Study of the impact of physico-chemical treatment processes on the final quality of water and the toxicity induced.
- Protecting water resources by assessing the pollution parameters of wastewater discharges, and by selecting treatment plant structures.