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UNIVERSITY
OF WARMIA AND MAZURY
IN OLSZTYN

ERASMUS+

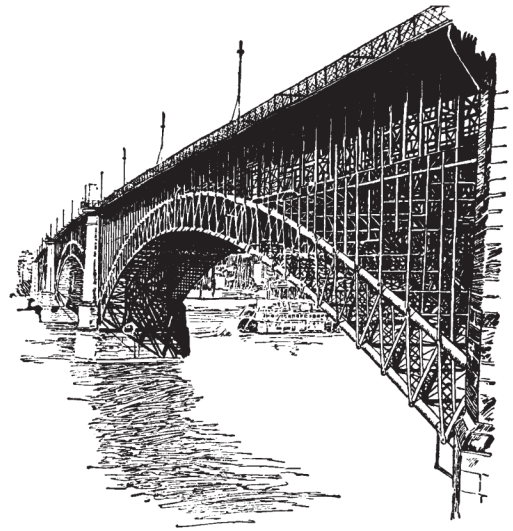
Faculty of Humanities

Blended Intensive Programme

CIVIL ENGINEERING ASPECTS OF SHAPING CRITICAL INFRASTRUCTURE

Course Description

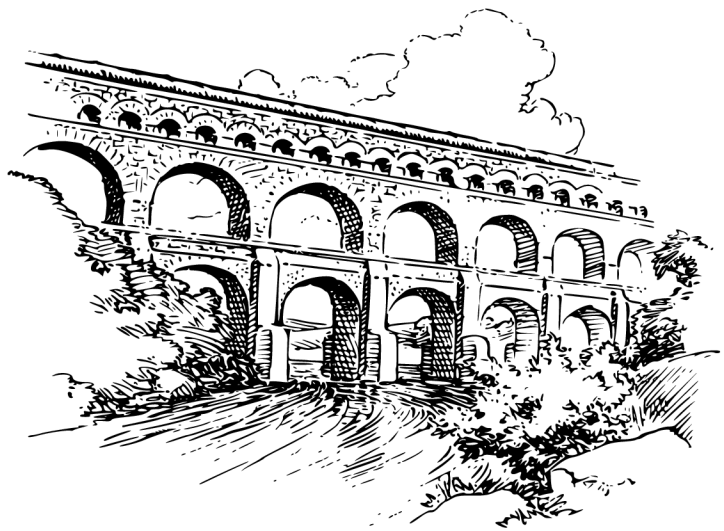
Civil engineering design and build solutions that are crucial for maintaining the smooth flow of transportation and the European. Poland's proximity to high-risk countries creates the need for logistical and communication security between Western European countries, Eastern Europe, and the Baltic regions of Europe. For this reason, objects known as critical infrastructure have been created, incorporating the latest technological and structural-material solutions. These secure the safety and interests of Poland and European Union countries.



Roads, bridges, strategic infrastructure (providing access to, for example, water or energy sources) are critically important objects that form the foundation of a country's proper functioning and ensure its security. This also applies to the entire European Union. In their construction, the latest materials and technologies are used, which every future engineer should know. Technology changes rapidly, and civil engineers and builders must always keep up with these changes to make good decisions and create increasingly modern and durable structures.

Learning Outcomes

The main goal of the course is to provide students with current knowledge on key challenges in the construction of critical infrastructure. The course will deepen students' knowledge on the design of strategically important objects, as well as solutions, building materials, and technologies used in their creation.



The course consists:

Part I – Distance Learning on March 10, 2026

Distance learning will be conducted in an e-learning environment (MS Teams). All related instructions will be sent to registered participants. Remote classes will be conducted in the form of lectures.

The following topics will be presented in the e-learning classes:

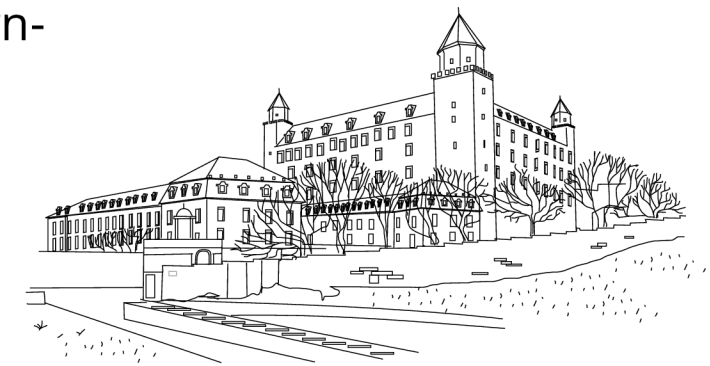
- Organizational information,
- Discussion of the principles and theoretical foundations of the practical task "Spaghetti Bridge" - a team hackathon
- The importance of strategic construction for the security of the country and the European Union
- Strategic construction - work planning, construction organization, and logistics systems in the construction of critical infrastructure
- Technologies and materials used in the construction of strategic facilities
- Modern technologies in the design, management, and monitoring of the technical condition of critical infrastructure facilities

The course consists:

Part II – In-Person Learning from March 23 - 27, 2026

This part will include in-person activities where students will:

- participate in lectures,
- take part in field classes and study visits,
- perform tasks in specialized laboratories,
- present the results of group work on a design-construction task.



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Format & Credits

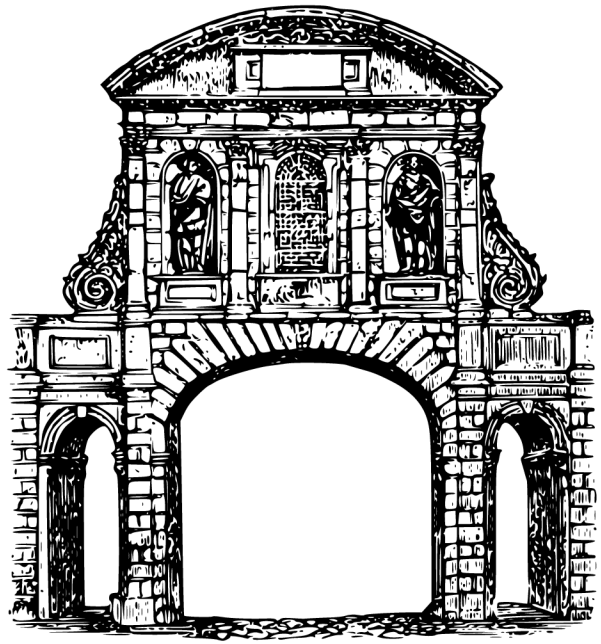
Virtual sessions: March 10, 2026
On-site component in Olsztyn: March 23 - 27, 2026
Location: Faculty of Geoengineering, Heweliusza 4, Olsztyn, Poland
Credits: 3 ECTS

Target Group

Bachelor, Master & PhD students in the following fields: civil engineering, construction, architecture
Requirements: English (B2).

Deadlines

Student selection & confirmation: **February 13, 2026**



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Funding & Costs

Erasmus short-term mobility grants available (ask your home university)
Students cover travel, accommodation and most meals (lunch included in the program)

Contact

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