Blended Intensive Programme
DATA-DRIVEN SOLUTIONS FOR A MORE SUSTAINABLE FUTURE

BIP ID: Will be provided later

Universities involved:

- Sofia University St. Kliment Ohridski - Coordinator
- T4EU universities - Partners

Short description of the BIP:

This blended intensive program includes series of activities in the field of Digital Transformation & AI that participants will be able to attend, among which a combined webinar, a hands-on workshop & a stakeholder challenge on GeoAI applications for climate change study and effective adaptation of European cities and regions.
The target group is focused on students (bachelor, master and PhD) and young researchers with no or a little programing skills.
The BIP is also part of the T4EU “incoming” PhD Track SMART CITIES AND REGIONS (offered by the T-Lab Smart Cities and Regions).

General Objective of the BIP:

This course intends to combine a specialized webinar and a practical seminar organized under the umbrella of the “stakeholder challenge” format to present the opportunities and demonstrate the capabilities of AI and GeoAI (geospatial artificial intelligence) in the study of the local characteristics of increasingly profound climate change and the effect it has on the geosystems that sustain life in European cities and regions. At a time when AI is transforming not only science but also our daily lives, this event will introduce and demonstrate to participants the latest geospatial analytics, automation, and predictive modeling based on artificial intelligence, directly addressing climate-related issues and the resulting natural hazards and risks.

Participants will learn about and could work with reproducible, scalable, and workflow-oriented methodologies for analyzing complex spatio-temporal data sets. The focus will be on the technological capabilities of geoinformation technologies in general, as well as popular tools and solutions such as Google Earth Engine. The capabilities of GeoAI, Generative AI, and no-code or low-code solutions for solving complex cases based on large geodata sets will be presented. The capabilities of AI to effectively support decision-making processes in all key areas that are particularly vulnerable to the deepening climate change and the resulting changing geography in European cities and regions will be demonstrated. Last but not least, the event will explore and test effective strategies for improving AI-based training and education in earth and environmental sciences.

Based on the knowledge gained from the above-described workshop, participants will work in groups and will have to propose a solution based on a given case study. The T4EU Stakeholder Challenge consists of an Open Innovation Challenge, a way to directly connect companies and/or institutions with young people who are invited to offer a concrete solution for an issue presented by a company/institution. Students have the chance to challenge themselves and provide innovative ideas for the company; they are guided through the process by a Mentor, a fundamental figure who provides guidance and training during the problem-solving phases of the challenges.

Specific Objectives of the BIP:

- To foster active dialogue between university and stakeholders.
- To provide the students with opportunities for real-life learning by doing.
- To mobilise the potential of students and young researchers to solve tasks driven from a particular stakeholder context.
- To equip students with opportunities to reach out to the general community.

Activities to be carried out:

- Workshop with lectures and presentations.
- Hands-on work in groups.
- Sharing and discussions on the results reached by the students.

Expected Learning Outcomes:

Upon the completion of the course, students are expected to:

- Become innovative problem-solvers capable of linking academic knowledge with real-world stakeholder needs through the "Stakeholder Challenge" format.
- Be familiar with the latest geospatial analytics and automation based on GeoAI, specifically focused on climate change and natural hazards.
- Implement reproducible and scalable methodologies for analyzing complex spatio-temporal data sets.
- Have improved their collaborative and communication skills by working in interdisciplinary groups to propose data-driven solutions for sustainable urban and regional adaptation.

Syllabus (topics to be covered):

1. Geographic Information Systems.
2. Geospatial technologies and GeoAI.
3. Climate change study.

ECTS: This Blended Intensive Programme will attribute 3 ECTS.

Timeline:

Virtual component:	**Physical mobility on-site:**
○ **Description of the virtual component:** Introductory lecture on the topic ○ **Date(s):** 22 October 2026 ○ **Time:** 13:00 CET	○ **Place:** Sofia ○ **Dates:** 26-30 October 2026 ○ **Arrival day**: 25.10.2026 ○ **Departure day:** 31.10.2026