TECHNISCHE UNIVERSITÄT DRESDEN

TAL TECH

WEST UKRAINIAN NATIONAL UNIVERSITY

National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute»

Co-funded by the European Union

COIL-SERENADE

Laboratory of Urban Energy Planning

Michele De Carli

Mohamad H. Khajedehi

Virtual Collaborative Learning (VCL)

Virtual = online, using new communication channels

Collaborative = in groups, benefitting from the experience of others

Learning = gaining new knowledge and experience

- Students are working on complex and realistic case studies in small groups
- In groups: high level of self-organization, responsibility for the group result, adoption of different roles (manager, reporter, expert, …)

Project time and effort (tentative agenda)

Session 0 – Kickoff: tool onboarding, team formation — Week 1 — **March 10 2026**

Session 1 – GIS: Mapping & geospatial data — **March 17 2026**

Session 2 – BEM: Modeling energy in buildings — Week 2 — **March 24 2026**

Session 3 – UBEM: Urban-scale modeling — Week 3 — **March 31 2026**

Session 4 – UBEM: Urban-scale modeling — Week 4 — **April 8 2026**

Group Project: Analyze & improve a real Ukrainian district — Weeks 5-6

Session 7 – Present Results: Show your impact! — **April 21 2026**

Report delivery — Week 7 — **April 28 2026**

Course Objectives

- Develop competencies in GIS for spatial data analysis.
- Apply BEM techniques to assess building energy performance.
- Utilize UBEM for large-scale energy consumption analysis.
- Benefit from international collaboration and teamwork through a virtual learning environment.
- Engage with real-world data and tools to propose energy-efficient solutions.