JOINT GREENBEAT – METACITIES
AUTUMN SCHOOL

MODULE I: SDG-DRIVEN BUSINESS MODELS & RESILIENCE ENGINEERING

MODULE II: WRITING WINNING PROPOSAL IN EU FUNDED FRAMEWORK PROGRAMS

Details and Registration

Date: October 14-15, 2025

***Schedule*:**

Tuesday 14/10

09:30 – 10:00 Welcome and Introduction to the Course – Brief Overview of projects GREENBEAT & METACITIES [Prof. V. Poulkov, TUS, D. Prevedourou, HAEC]

10:00 - 13:00 SDG-driven Business Models [Dr. Pete Tsolis, HAEC]

13:00 – 14:00 Lunch break

14:00 - 17:00 Resilience Engineering [Dr. Panagiotis Kalozoumis, HAEC]

Wednesday 15/10

10:00 - 13:00 Writing Winning Proposals [Dr. Panagiotis Kalozoumis, D. Prevedourou, HAEC]

***Venue*:**

Technical University of Sofia, Bulgaria

8 blvd. Kliment Ohridski

The Rectorate, room 1434

https://maps.app.goo.gl/tbVmZLuqJ7DsV8G56

Cost: Free (registration required)

Participation: on-site and on-line

How to Register:
https://docs.google.com/forms/d/e/1FAIpQLSfmn3deXmW7T3KgzZrf51Byp72wjUFX1p7dTJzSXJJblgYIsg/viewform

Involved Partners: HAEC, TUS, CGC, SAV, ICTC

Short Description of Modules

Module I: Integration of UN SDGs and Sustainable Businesses

The course design will align the United Nations Sustainable Development Goals (SDGs) with emerging technologies or identify gaps per goal. When developing a business system, the incentives for one goal may not align with the objectives of another. For example, SDG 8, decent work and economic growth may not align easily with SDG 13 and combating climate action due to emissions that may arise when developing the business model and supporting infrastructure. Students are encouraged to analyze their own region's business systems and models to identify gaps and propose technological solutions for future development.

Learning Outcomes

Participants will:

- **Understand Leadership Dynamics**: Learn how leaders' perspectives influence sustainable business policies and development.
- **Embed UN SDGs in Business Models**: Align business models with SDGs, focusing on economic, social, and environmental impact.
- **Address Complexity in Business Networks**: Develop strategies to navigate and innovate within the complexity of business models and systems.
- **Foster Public-Private-Academic Partnerships**: Explore collaboration frameworks that combine municipal governance, private sector innovation, and academic research.

Schedule

- **Leading and Sustainability**
  - This topic explores how leadership drives sustainable development. Leadership in sustainability requires balancing economic growth with cultural preservation, environmental protection, and social well-being, guided by frameworks such as the UN Sustainable Development Goals (SDGs). Complexity leadership theory emphasizes adaptive, innovative approaches to leading within interconnected systems
- **Systems and Complexity**
  - Business and urban development are examples of highly complex systems, involving networks of industries, stakeholders, and communities. Complexity theory highlights that outcomes are not equal to the sum of parts but emerge through dynamic interactions. Applying systems thinking helps leaders understand interdependencies between policies, infrastructure, culture, and sustainability. For instance, SDG interconnections—such as poverty reduction and education demonstrate how solving one challenge requires addressing others simultaneously

- **Systematic Planning**
    - Systematic planning refers to long-term, structured strategies that balance environmental, cultural, and economic objectives. Effective planning requires involving municipal leaders, regional authorities, and stakeholders in the design of sustainable business models. It is a cornerstone of sustainable development frameworks recommended by the UN and scholarly research
- **Private Public Partnerships (PPP)**
    - PPPs play a crucial role in delivering sustainable business models, infrastructure, and innovation. Successful partnerships combine the efficiency and investment capacity of the private sector with the regulatory and social accountability of the public sector. Examples include developing eco-friendly projects, protecting cultural heritage, and supporting local communities
- **Sustainable Policies**
    - Policies provide the framework for sustainable development in business models. Effective sustainable policies must align with SDGs, address corruption and governance gaps, and ensure that local and municipal voices are included in national strategies. Strong policy frameworks can prevent environmental degradation, preserve cultural heritage, and encourage equitable economic benefits.
- **Business Models**
    - Sustainability-driven business models integrate SDGs into their core strategy. These models prioritize resilience, resource efficiency, and long-term value creation over short-term profits. Connects this to SDG-driven business models emphasizing adaptability and innovation in the face of complex global challenges.

Module II: Resilience Engineering

The course introduces the basic principles and applications of Resilience Engineering in the context of environmental systems and sustainable development. It provides a compact but comprehensive three-module program. The structure is designed to balance the necessary theoretical aspects with practical insights, and real-life examples.

The course is introductory, therefore, apart from engineers and scientists, it is also approachable by students and engaged citizens. Real-world case studies and systemic thinking are extensively employed to facilitate participants to explore how resilience can become a central design goal in technical systems, urban infrastructures, business models, and governance frameworks.

Module 1: Foundations of Resilience Engineering
- Definitions: resilience, robustness, adaptability, transformability
- History and evolution of resilience thinking (ecology, safety engineering)
- Complex systems and emergence
- The limits of traditional risk management
- Anticipation vs. reaction: proactive system design

Module 2: Resilience and the Climate Crisis
- Environmental infrastructures: energy grids, water systems, agriculture
- Failure modes in critical systems under climate stress
- Resilience metrics and indicators in environmental contexts
- Adaptation and mitigation strategies
- Urban resilience and regional planning

Module 3: Resilience in Green Innovation and Business Models
- Case studies: resilient supply chains, circular economy, energy communities
- Designing for flexibility: modularity, redundancy, learning loops
- Policy frameworks and standards
- Systemic resilience in governance and stakeholder networks
- Interactive workshop: building a resilient business canvas

Module III: Writing Winning Proposals

This module gives an overview of the Horizon Europe Framework Program and delves into the Structure and Organization of the various proposal types, the most relevant to the intended trainees being Research and Innovation Actions (RIA), Innovation Actions (IA) and Coordination and Support Actions (CSA). The information, practices and guidelines to be shared are the result of the experience of experts on both project proposal writing and evaluation. The contents of the modules cover the Excellence, Impact and Implementation Parts of each proposal, as well as best practices and guidelines on formulating a winning consortium and engaging the most appropriate partners to successfully implement the proposed work program. Last but very important, budgeting and financial issues for each proposal type are detailed. The contents of the training module are structured as follows:

Part A

- Understand Horizon Europe structure
- Distinguish types of actions (RIA, IA, CSA)
- Know the characteristics, disciplines, and beneficiaries
- Understand proposal format

Part B

- Project management
- Dissemination
- Exploitation
- Communication

Part C

- Implementation Plan
    - Organization of Work in WPs
    - Charts
    - Deliverables, Milestones, Risks
    - Capacity of the consortium as a whole
- Partnership (identification of appropriate partners, invitation, on boarding)
- Budgeting and Financial Issues.

About the METACITIES project

Three place-based innovation ecosystems in Cyprus, Greece and Bulgaria partner together to create an Excellence Hub for Future Cities and Regions in Southeast Europe (SEE). The The METACITIES Excellence Hub is a sustainable network that offers a common platform for collaboration, cross-fertilization, and best practices sharing across borders, sectors and disciplines on knowledge production, circulation and use. Founded upon a joint R&I strategy, a nexus of collaborative links across sectors, joint research, innovation and outreach activities as well as business modelling and sustainability plans, the collaboration aims to benefit citizens, stakeholders, regional ecosystems and the whole SEE region. The thematic focus on future and metaverse cities necessitates the definition of ambitious R&I agendas and the uptake of advanced digital technologies. Digital Twins (DT) of future cities/regions provide accurate and reliable reference representation seamlessly unifying the physical, digital and human worlds and enabling stakeholders to assess the effects of any changes before investments and implementations actually occur. The proposed Open Digital Twin Framework facilitates co-development of complementary future city domains along with their equivalent DTs. The applied Quadruple Helix Model forges synergies among actors and alignment of public and private sector priorities for regional development. PoC studies, small-scale pilots and feasibility assessments validate project outcomes. Green Business and Operation Models are developed for future and metaverse cities, as well as for the METACITIES Excellence Hub. Investment and Sustainability Plans will mobilize the communities of the three innovation ecosystems to progress faster in joined efforts. Common investment plans for R&I, infrastructures and support for real-life experimentation, aim to leverage national, regional and European funds as well as crowd funds and private capital in a synergetic manner.

About the GREENBEAT project

GREENBEAT is at the forefront of fostering research and innovation within the realm of Sustainable Future Communication Networks and Technologies. Our mission is to enlighten and engage the higher education sector on the paramount importance of integrating environmentally conscious and sustainable practices into research and innovation. With a strong emphasis on networks and technologies that bridge intelligence with trustworthiness, GREENBEAT aligns with the European Green Deal's vision of a resource-efficient, competitive economy, aiming for zero net emissions by 2050.

Our core focus lies in advancing Sustainable Future Communication Networks, particularly through the lens of digital technologies as pivotal to achieving the European Green Deal objectives. By leveraging the scientific prowess of our consortium in wireless communication technologies, security, green business model innovation, and knowledge transfer, GREENBEAT aims to:

- **Innovate Communication Networks**: Pioneering research that integrates disruptive digital technologies to design future communication networks which are not only technologically advanced but also sustainable.
- **Educate and Train**: Developing a curriculum that prepares researchers to uncover and maximize the potential of these technologies for sustainability, fostering an understanding of their value through business model innovation and experimentation.
- **Strengthen Innovation**: Enhancing innovation capacity through an effective tech and knowledge transfer process, ensuring research and expertise are utilized to create a broad impact across various sectors.

The project believes in a 'learning by doing' approach, sharing best practices to support research that embodies sustainable and trustworthy technology designs. Our goal is not just to promote economic prosperity and sustainable growth but to act responsibly, addressing individual and collective needs while minimizing negative impacts on power consumption, carbon footprint, and resource usage. Join us in shaping a sustainable, trustworthy future for communication networks and technologies, driving efficiency, and fostering new ways of sustainable living for the next decades.