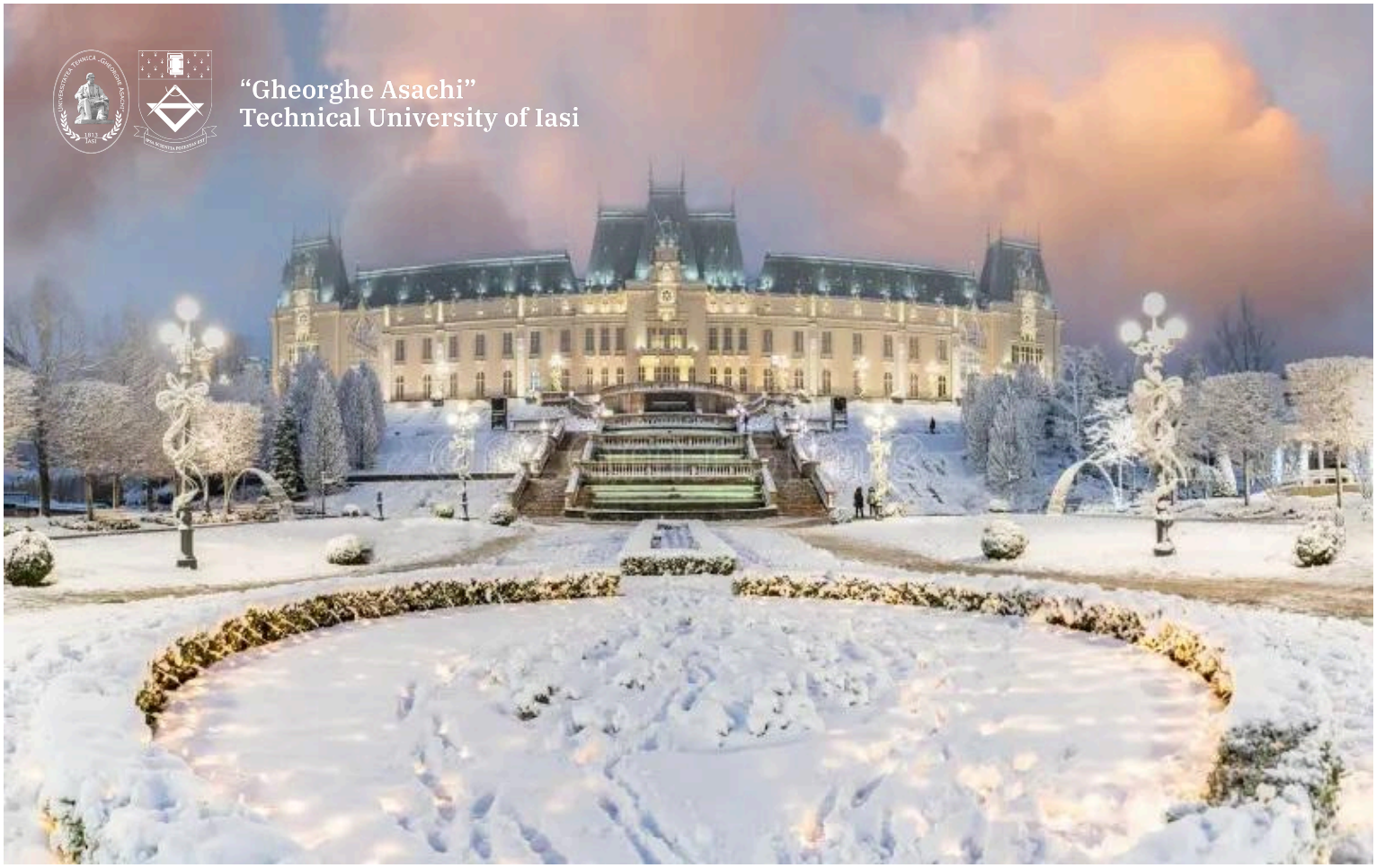


# Call for Senior Winter School at TUIASI

## Science Meets Industry

### 26-30 January 2026

**The 2026 Senior Winter School hosted by "Gheorghe Asachi" Technical University of Iasi (TUIASI), brings together students, academics, and industry experts to explore how scientific knowledge and industrial practice can drive innovation and address societal challenges. The central theme, *Science Meets Industry*, reflects our commitment to building bridges between research and application, fostering creativity, and cultivating responsible innovation.**

INGENIUM European University

Co-funded by the European Union

Through three distinct Blended Intensive Programmes (BIPs), each bearing 3 ECTS, participants will engage in lectures, workshops, and collaborative projects that connect academic expertise with real-world industry needs.

Whether designing sustainable packaging, developing ethical approaches to artificial intelligence, or tackling industry-driven challenges, students and staff will work side by side to co-create solutions with tangible impact. The programs include two online meetings before the event in Iași and one follow-up meeting afterward, ensuring continuity and deeper engagement.

The morning sessions are designed as 3-4 lectures/day, from 9 to 12 am, and will be open to all participants.

**Participants**: 80 students (8 students/partner), 10 mentors (1 mentor/partner), 6-8 staff members are invited to act as guest lecturers during the morning sessions.

### Who can participate:

- *25-27 MSc and PhD students from across INGENIUM can be engaged as participants in each BIP.*
- *2-3 INGENIUM staff are invited to consider guest lecturing in the morning for each day, in each BIP.*
- *3-4 INGENIUM staff are needed to mentor the teams along the process (afternoon workshops)/for each BIP.*

## 1st BIP - **Creative Convergence: Innovating Industries Together**

### Program Rationale

By forging connections between diverse fields, this initiative exemplifies the synergy that arises when creativity meets collaboration. Students will engage in a dynamic process of innovation, journeying through three pivotal pillars of the 5Cos framework: **co-ideation**, **co-valuation**, and **co-design** (co-test, and co-launch). These phases of the innovation process will empower participants to co-create visionary packaging solutions that are not only functional and sustainable but also tailored to the challenges posed by unconventional product shapes. The event seeks to bridge academia and

industry, providing a platform where emerging talents can confront real-world challenges and propose transformative solutions.

The mornings will provide theoretical input and methodological guidance on (open) innovation, with the focus on the 5Co-s model and patent writing, while the afternoons will engage students in applying these methods to real-world problems in a structured and collaborative setting.

Students will be divided into 4 working teams. Each team is invited to collaborate, innovate, and design cutting-edge packaging solutions for products with challenging shapes. Participants will not only **create a functional, aesthetically pleasing design** by using a **co-creation** strategy but also learn the intricacies of drafting a **patent for their invention**, ensuring their intellectual property is protected.

## Learning Objectives:

- **Demonstrate** creativity and effective collaboration in team settings by applying open innovation strategies to real-world challenges.
- **Design and develop** functional packaging solutions tailored to non-conventional product shapes through hands-on prototyping activities.
- **Explain** the key principles of patent writing and **apply** foundational knowledge to draft a basic patent application, including considerations for intellectual property protection.
- **Evaluate and integrate** sustainable materials and environmentally friendly practices into packaging design projects.

## Proposed Event Structure

### *1. Opening Sessions*

The event begins with an introduction to packaging challenges for uniquely shaped products. Industry professionals and experts will share their insights on innovative packaging design, real-world applications, and tips for overcoming design limitations.

### *2. Design Workshops*

Participants will attend workshops focused on:

- Material selection for durability and sustainability.

- Techniques for creating functional yet visually appealing packaging.
- Strategies for accommodating odd product dimensions.
- The use of co-creation, a key implementation strategy for open innovation.

***3. Collaborative Design Challenge***

Students will form teams to brainstorm (**co-ideation**), to vote on the best ideas (**co-valuation)**, sketch, and prototype packaging solutions for a designated difficult-shaped product (**co-design)**. Teams will be encouraged to think outside the box and use creative methods to address the product's unique requirements.

***4. Patent Writing Training***

Legal experts and professionals will conduct a session on intellectual property rights and the steps involved in drafting a patent. Participants will learn how to describe their invention in technical terms, the importance of claims and their formulation, and steps for **submitting a patent application**.

***5. Final Presentations***

At the end of the week, each team will present their packaging designs and discuss their approach to drafting the associated patent. Evaluators from design, engineering, and legal fields will assess the solutions based on innovation and originality, as well as the feasibility and functionality of the design.

# 2nd BIP - **Ethical AI Development**

## Program Rationale

Artificial Intelligence (AI) is transforming industries and research fields across Europe and globally. Ensuring the ethical development and deployment of AI systems is critical to safeguard human rights, fairness, and societal well-being. This program addresses a pressing need for interdisciplinary education on AI ethics, tailored to the diverse academic backgrounds of the INGENIUM Alliance students.

The program is structured to unfold over one intensive week, combining **morning lectures** with **hands-on afternoon workshops**. The mornings will provide theoretical input and methodological guidance on innovation, while

the afternoons will engage students in applying these methods to real-world problems in a structured and collaborative setting.

## Learning Objectives

By the end of the program, participants will be able to:

- Understand fundamental ethical principles and challenges in AI development.
- Understand methods to analyze and mitigate bias, ensure transparency, and promote accountability in AI systems.
- Navigate privacy, data protection, and security issues in AI applications.
- Evaluate societal impacts and familiarize yourself with governance frameworks related to AI.
- Experiment with the application of ethical frameworks to real-world industry use-cases across sectors like healthcare, finance, education, social services, etc.

## Proposed Event Structure

### *1. Opening Sessions*

The event begins with Industry professionals and experts sharing their insights with an Introduction to AI and ethical foundations, with guest lectures and real-world case studies coming from professionals in the Digital Innovation Zone EDIH Ecosystem.

### *2. Workshops*

Participants will attend workshops focused on:

- Introduction to AI and ethical foundations.
- Responsible AI (Fairness, Accountability, Transparency, Explainability).
- Privacy, Security, and Data Ethics.
- Societal and Future Implications of AI.

Pre-readings, case study discussions and quizzes will be part of the workshops.

***3. Collaborative projects***

Students will form teams to brainstorm (**co-ideation**), to vote on the best ideas (**co-valuation)** for the elaboration of group projects that apply ethical frameworks to real-world industry use-cases across diverse sectors.

Teams will be encouraged to think outside the box and use creative methods to address the industry-relevant ethical AI challenges.

The presentations will include: an overview of the identified ethical AI challenge, the team's reasoning process and application of relevant ethical frameworks, the proposed solution or mitigation strategy, including feasibility considerations, reflection on societal impact, potential risks, and long-term implications.

***4. Final Presentation***

At the end of the week, each team will present their project to a panel of evaluators composed of academic faculty, industry experts from the Digital Innovation Zone EDIH ecosystem, and invited guest lecturers.

# 3rd BIP - **Driving Innovation Through Industry Challenges**

## Program rationale

This BIP brings together academia and industry by tasking interdisciplinary MSc and PhD student groups with addressing concrete challenges provided by industrial partners, from different domains, e.g., smart cities and mobility, digitalization and AI, etc, that can drive innovation forward.

## Learning Objectives

By the end of the program, participants will be able to:

- Define and frame problems in ways that foster meaningful, innovative solutions.
- Apply creativity tools to generate, evaluate, and refine solution concepts.

- Strengthen their skills in problem solving, ideation, technology scouting, feasibility analysis, and business model design.
- Understand the fundamentals of intellectual property rights, patentability, and strategies for research and innovation valorization.
- Critically assess the broader applicability, market readiness, and societal impact of proposed solutions.

## Proposed Event Structure

### *1. Opening Sessions*

The program is structured to unfold over one intensive week, combining morning lectures with speakers from the industry and hands-on afternoon workshops. The mornings will provide theoretical input and methodological guidance on innovation.

### *2. Workshops*

In the afternoons students will engage in applying different methods to real-world problems in a structured and collaborative setting.

The workshops will focus on:

- Structured problem analysis phase.
- Moderated ideation workshop - using creativity tools to generate and refine solution concepts.
- Technical feasibility, considering also the potential for intellectual property protection
- Apply tools such as the Business Model Canvas or Innovation Canvas to structure their concept's value proposition, key activities, stakeholders, resources, and revenue streams.

### *3. Collaborative projects*

At the outset, students will be divided into 5-6 working groups. Each group will explore one or more **pain points**—specific challenges articulated by industry stakeholders. These challenges, gathered in advance or presented during the event, will serve as starting points for the entire innovation process.

***4. Problem analysis & solution ideation***

The first stage involves a structured problem analysis phase. Students will interact with mentors and potentially company representatives to better understand the context and constraints of their assigned challenges. They will define and frame the problem in a way that opens the door for meaningful, creative solutions.

Building on this understanding, each group will then participate in a moderated ideation workshop, using creativity tools to generate and refine solution concepts.

***5. Technical feasibility***

Once promising solutions emerge, the third phase will focus on technical feasibility, considering also the potential for intellectual property protection, guided by an introduction to IP rights, patentability, and valorization strategies.

The next step involves a **potential assessment exercise**, where each group will apply tools such as the **Business Model Canvas** or **Innovation Canvas** to structure their concept's value proposition, key activities, stakeholders, resources, and revenue streams. This exercise allows students to critically reflect on the broader applicability, market readiness, and societal impact of their proposed solutions.

***6. Final Presentations***

At the end of the week, each group will **present their innovation concept** in a final session. Feedback will be provided on both the technical soundness and the innovation potential of their work.

# How it will be funded

Scholarships for travel expenses and accommodation will be offered through INGENIUM or Erasmus+ grants. Contact your local INGENIUM team or International Office for details.

# How to Apply

Students from INGENIUM partner universities are invited to apply for participation in the Senior Winter School at TUIASI.

**For Students (MSc & PhD):**

## Application Process:

1. Submit your application through the **INGENIUM School Platform**
    a. Register only with your institutional email on the platform.
    b. Once the account is approved, Sign in to access the platform;
    c. Follow the Application procedure described on the platform.

**IMPORTANT** - If applicants register with another email than their university email, then the application cannot be processed and will be invalid.

2. Applications will be reviewed by partner institutions.
3. Selected participants will receive confirmation and further details regarding travel, logistics, and preparatory online meetings.
4. All partner universities must confirm their selected students by **15 November 2025.**

For more details and recommendations on how to apply, please contact your **local INGENIUM Office**.

Each applicant must indicate their **order of preference** for the three proposed BIPs:

1. Creative Convergence: Innovating Industries Together
2. Ethical AI Development
3. Driving Innovation Through Industry Challenges

Selection will be based on **available slots** and **relevance to the applicant's study domain**. Up to **25–27 students per BIP** will be selected, with a **maximum of 8 students per partner institution**. These 8 students will be distributed equally among the three BIPs (e.g., 3-3-2; 3-2-3; 2-3-3).