

SLOG 4.0

Digital and green skills for boosting innovation
and sustainability of the logistics sector



PROJECT AIMS

The project links two frameworks: sustainability/green skills and 4.0 technologies/digital skills within the field of logistics and aims to adapt green and digital skills of students to the requirements of the industry 4.0.

**"TO INCREASE THE ADOPTION OF SUSTAINABLE AND DIGITAL PRACTICES
IN THE LOGISTICS SECTOR, SECTOR RESPONSIBLE FOR CREATING
SUBSTANTIAL COSTS FOR SOCIETY."**

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PRESENTATION ON...

Slog4.0 current developments

The Delphi Methodology was used to elaborate **a new training course!**

The **Delphi process** was conducted at both **national and international levels**, comprising **two rounds** each. The **national level** aimed to identify key and essential topics related to sustainability, digitalization, and Industry 4.0. In the initial round, 68 panelists put forward numerous relevant topics. After eliminating duplicates and consolidating similar topics, the list was refined. In the second round, 56 panelists ranked the **51 selected topics** based on their expert-based assessment of importance. Notably, seven highly ranked topics emerged: (1) **Industry 4.0 and Logistics 4.0** concepts, (2) **Digitalization and Logistics 4.0 maturity models**, (3) **Sustainability in Logistics 4.0**, (4) **Economic sustainability in Logistics 4.0**, (5) **Social sustainability in Logistics 4.0**, (6) **Environmental sustainability in Logistics**, and (7) **Industrial Internet of Things for green logistics**.



The Delphi process



- A multi-round Delphi study that began with open ended questions and progressed to more concrete outcomes in subsequent rounds.
- Included practitioner experts and HEI teachers/academics.
- A national and an international level, each consisting of two rounds.
- A mix of qualitative and quantitative measures.

		Academics	Practitioners	Sum
National level	First round	32	36	68
	Second round	25	31	56
International level	First round	9	19	28
	Second round	7	9	16

PRESENTATION ON...

Slog4.0 current developments

The Delphi Methodology was used to elaborate a **new training course!**

Following the Delphi study at the national level, the process continued at the **international level**. In the first round of the international level, 28 panelists proposed learning outcomes for each topic defined at the national level. Subsequently, in the second round of the international level, 16 panelists ranked the **127 collected learning outcomes**. Among these, the four most highly-rated learning outcomes are as follows:

- Student is capable of identifying 4.0 technologies and their relevance to Logistics 4.0 applications.
- Student can critically evaluate transportation modes with consideration for green and sustainable objectives.
- Student can strategize the utilization of digital technologies (e.g., digital platforms, software, and other tools) to automate and optimize various logistics processes such as transportation planning, inventory management, and order fulfillment.
- Student possesses the ability to effectively work as part of a team



These highly-rated learning outcomes imply the importance of technological understanding, sustainability awareness, and collaborative skills in equipping students for the dynamic field of Logistics 4.0.

DID YOU KNOW...

What are green skills and why do they matter in sustainable logistics?

Green skills, in the context of sustainable logistics, refer to the competencies, knowledge, and expertise required to implement environmentally responsible practices in the logistics industry. These skills are crucial for addressing the challenges posed by **climate change**, reducing carbon emissions, and minimizing the environmental impact of logistics operations.

In **sustainable logistics**, green skills play a pivotal role in several aspects. Firstly, they enable professionals to adopt **strategies and technologies** that mitigate greenhouse gas emissions, such as energy-efficient transportation methods, route optimization, and eco-friendly packaging solutions. This contribution to climate change mitigation is a vital aspect of sustainable logistics. Secondly, green skills **empower professionals** to minimize resource consumption and waste generation, promoting resource conservation. Through lower energy and water usage, reduced material waste, and increased recycling, sustainable logistics practices align with environmentally responsible principles.



DID YOU KNOW...

What are green skills and why do they matter in sustainable logistics?

Moreover, the knowledge of green skills is instrumental in complying with **environmental regulations**. As governments and international organizations impose stricter environmental standards, logistics companies must keep up with these requirements to maintain regulatory compliance and reduce environmental impacts. Beyond regulatory obligations, sustainable practices foster a **positive reputation** for logistics companies. Embracing green skills demonstrates a commitment to environmental responsibility, attracting environmentally conscious clients and partners. This, in turn, enhances the company's brand perception and competitive advantage in the market.

Importantly, green skills also contribute to **cost savings in logistics operations**. For example, implementing energy-efficient transportation and optimizing routes can lead to reduced fuel consumption and overall operational expenses, benefiting both the environment and the company's financial bottom line.

Furthermore, green skills help logistics professionals **adapt to the changing conditions** caused by climate change. Extreme weather events and shifting environmental conditions can significantly impact supply chains. Professionals equipped with green skills are better prepared to develop resilient logistics strategies that withstand these challenges.

Lastly, embracing green skills fosters a **culture of innovation** within logistics organizations. Constantly seeking eco-friendly and sustainable solutions enhances the company's ability to innovate and stay ahead of sustainability trends in the industry.

Green skills are integral to sustainable logistics. Equipping professionals with these skills enables the development of environmentally friendly, efficient, and resilient supply chains. By integrating green practices, logistics companies can contribute to global sustainability efforts while improving their operational efficiency and reputation within the industry.

MARIBOR PROJECT MEETING RECAP:

Advancing logistics training: SLOG4.0

Dear SLog4.0 Project Community,

We are thrilled to share with you the exciting progress made during the recent SLog4.0 project meeting in Maribor on April 20-21, 2023. This gathering brought together all partners, united in their commitment to shaping the future of logistics training. Through collaborative efforts and innovative methodologies, the meeting was a resounding success, marking significant strides in the project's journey.

The event commenced with a warm welcome from the University of Maribor (UM) and the Poznan University of Technology (PUT), setting the stage for fruitful discussions ahead. UM led the presentation of the findings from initial tasks, which offered valuable insights into the current state of logistics training. These findings, along with the methodology and design principles, laid a robust foundation for the improvement of logistics education and allowed to identify specific training requirements in the logistics sector.



MARIBOR PROJECT MEETING

RECAP:

Advancing logistics training: SLOG4.0

This interactive session allowed all partners to validate the design principles derived from the Delphi study, ensuring a diverse array of perspectives were considered. The heart of the meeting revolved around the development of the SLog4.0 Curriculum. UM led constructive discussions on module titles, contents, learning outcomes, teaching methods, and the duration of training. The collaboration among partners was truly commendable as they worked together to shape a comprehensive and effective curriculum that meets industry demands.



On the second day, the University of Gaziantep (GAUN) took the lead in discussions on establishing a collaborative platform for e-learning training materials. The proposed platform aims to foster effective communication and resource sharing among all partners, enhancing the project's overall impact. Participants engaged in distributing tasks and devising a well-coordinated work plan to implement the collaborative platform and create engaging e-learning materials.

As the meeting drew to a close, participants reflected on the fruitful discussions and the promising outcomes achieved through collaborative efforts.

The collaborative spirit demonstrated during the event has set the project on a path to make a lasting impact. Together, we will continue to shape a comprehensive curriculum, establish a collaborative platform, and disseminate knowledge to create a transformative future for logistics training.

Stay tuned for more updates as we embark on this exciting journey together!

WHAT IS SLOG4.0?

Slog4.0 is a European project that aims to promote the uptake of eco-friendly and technologically advanced approaches within the logistics industry, a sector known for generating significant expenses for society, including greenhouse gas emissions and pollutants. For this purpose, it aims to contribute to the formation of a fresh cohort of proficient professionals for the logistics sector, equipped with a sustainability-focused mindset and a comprehensive skill set aligned with the principles of Industry 4.0.

PROJECT INFORMATION

Name: Sustainable Logistics4.0: Digital and green skills for boosting innovation and sustainability of the logistics sector

Number: KA220-HED-B12C4B93

Duration: 36 months

Funding: Erasmus+ Programme of the European Union, call "Cooperation partnerships in higher education"

PROJECT PARTNERS

The consortium includes 4 universities that believe in the need of proposing an innovative training offer in the field of logistic 4.0 by developing a new interdisciplinary curriculum, and 3 companies providing specialized and advanced services, selected upon the expected commitment proven by consolidated previous relations and their acknowledged proficiency.

The partners of the project are:

- ◆ Poznan University of Technology (Poland) - coordinator
- ◆ University of Aveiro (Portugal)
- ◆ University of Gaziantep (Turkey)
- ◆ University of Maribor (Slovenia)
- ◆ Valuedo srl (Italy)
- ◆ ECQA (Austria)
- ◆ Zerynth srl (Italy)



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