



Digital Twin
on smart manufacturing

PROJECT NEWSLETTER

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WELCOME TO OUR LATEST NEWSLETTER!!

We would like to share the progress on the development of our comprehensive training course designed to equip future professionals with the essential skills in Digital Twin technology and smart manufacturing. This program is tailored to meet the needs of mid-to-high-level IT and OT technicians, preparing them for the challenges of an evolving digital landscape.





THE DIGITAL TWIN TRAINING COURSE

Digital Twin Skills Index

The Digital Twin Skills Index identifies and categorizes the essential skills and competencies required for Digital Twin Technicians. This index serves as a foundation for developing educational programs that align with industry needs and standards. You can read the standalone version of the index [here](#).

Overview of the Training Course

The Digital Twin on Smart Manufacturing training course is a 450-hour curriculum divided into ten distinct modules, each focusing on critical aspects of Digital Twin technology and related fields. These modules cover everything from introductory topics to advanced applications, ensuring a holistic learning experience for participants from diverse backgrounds.



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OVERVIEW

- TM1 – Introduction (60 hours)

This module covers fundamental topics, including PLC programming, 3D drawing, and IoT integration. The course also offers an introduction to programming (Python, C#) to build a solid foundation for the participants.

- TM2 – Digital Twins (45 hours)

A more theoretical module that provides an overview of Digital Twins at different levels—2D, 3D, and Virtual Commissioning. This module prepares learners to grasp the key concepts necessary for advanced manufacturing processes.

- TM3 – Virtual Commissioning (60 hours)

Through practical exercises, learners will understand how virtual commissioning works and how to simulate real-world manufacturing scenarios before implementation.

- TM4 – Virtual Maintenance (60 hours)

A highly theoretical module that focuses on maintaining systems through virtual models, ensuring students understand how to maintain equipment efficiently, even in remote settings.

- TM5 – Business Intelligence (45 hours)

This module equips learners with the skills to use business intelligence tools, enhancing their decision-making processes by analysing data from Digital Twins.

- TM6 – Virtual Environment (45 hours)

Participants will dive into Artificial Intelligence and Extended Reality environments, learning advanced techniques in AI and how it integrates with Digital Twins.





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OVERVIEW

- TM7 – Industrial Cybersecurity (45 hours)

Focuses on the critical need for securing industrial systems, this module teaches students about cybersecurity protocols in Digital Twin environments.

- TM8 – Other Technologies (45 hours)

Explores key technologies such as Robotics, Reverse Engineering, and Cloud Computing, providing essential skills for modern manufacturing environments.

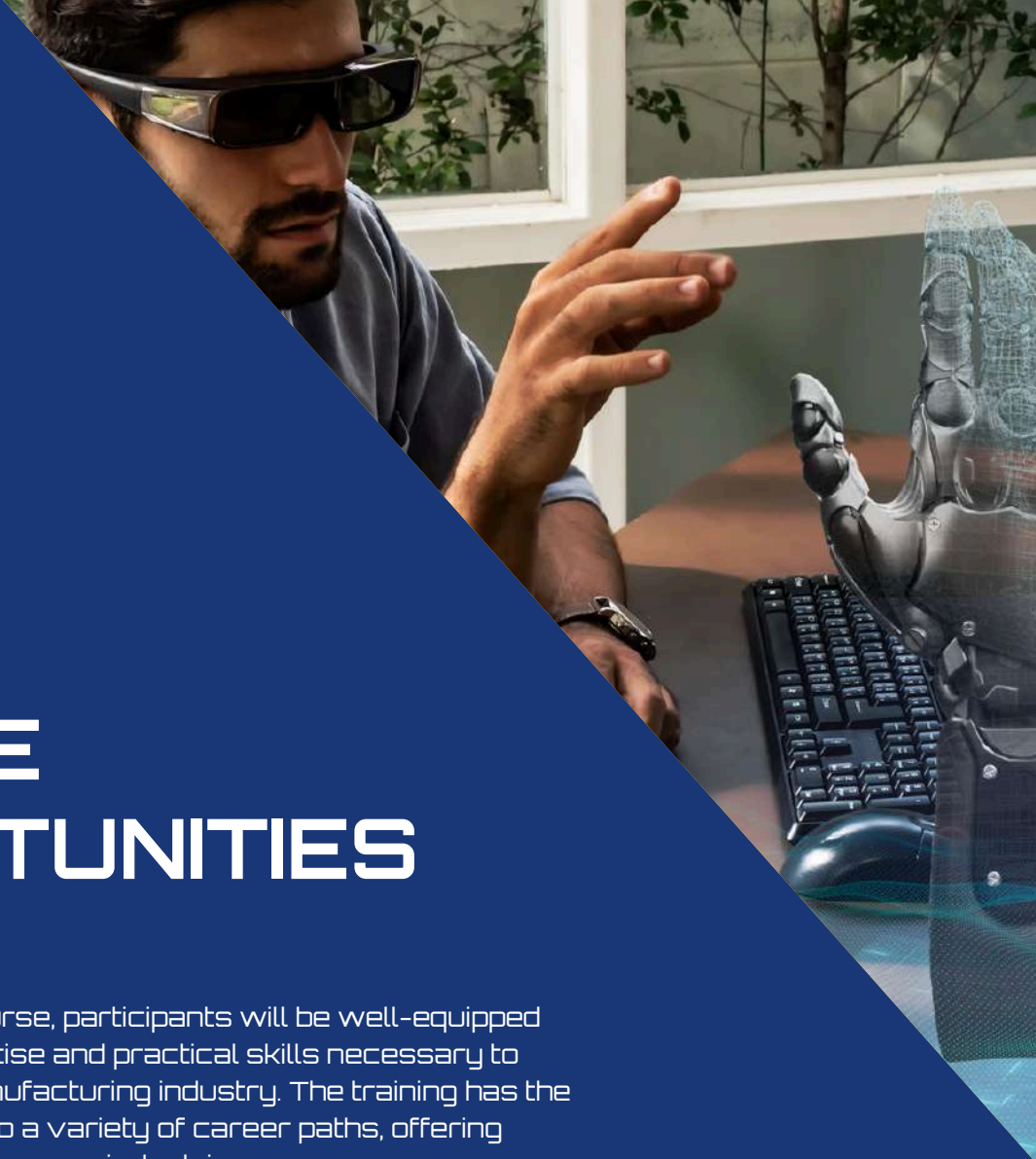
- TM9 – Green Transition (25 hours)

This module introduces sustainable manufacturing practices, highlighting the impact of Digital Twin technology on sustainability, energy conservation, and waste management.

- TM10 – Entrepreneurship and Incubator Setting (20 hours)

Equips learners with entrepreneurial skills, teaching them how to develop and manage startups and business incubators focused on Digital Twin technology.





FUTURE OPPORTUNITIES

Upon completing the course, participants will be well-equipped with the technical expertise and practical skills necessary to thrive in the modern manufacturing industry. The training has the potential to open doors to a variety of career paths, offering significant opportunities across industries.

What You Can Expect:

In the near future, the project will offer a unique opportunity for students, willing to test their knowledge and abilities. National Skill Competitions will be organized in partners' countries, providing a chance to compete on the European level with students from other countries. Along with the pilot testing, Digital Twin project will offer several opportunities to engage not only business professionals, but also to raise interest among young people about new technologies. Along with the pilot testing of the training course, we are planning to reach a wide audience and to promote new technological methodologies and ideas.



FUTURE OPPORTUNITIES

Learners who complete the course can also expect:

Enhanced Employability

With hands-on training in key areas such as Virtual Commissioning, AI integration, and Industrial Cybersecurity, participants will be in high demand, particularly as industries transition towards Industry 4.0 practices.

Career Growth in Digital Twins and Smart Manufacturing

As businesses continue to adopt Digital Twin technologies, the need for skilled professionals in smart manufacturing will gradually increase. Participants can pursue careers in automation engineering, system simulation, production optimization, and more.

Opportunities in Sustainability and Green Technology

The Green Transition module prepares students for the future of sustainable manufacturing, allowing them to lead projects that focus on reducing environmental impacts and enhancing resource efficiency.

Entrepreneurship and Innovation

With the Entrepreneurship module, participants will gain the knowledge to launch their own ventures or contribute to startups, particularly in areas involving digital innovation and smart manufacturing solutions.



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OUR PARTNERS

Our project brings together a diverse consortium of educational institutions, SMEs, and industry leaders from across Europe:



Vocational Education and Training Centre, and the Project Coordinator.



Automation solutions provider.



3D technology and CAD solutions provider.



Digital education solutions provider.



Leading academic institution in technology and engineering.



Vocational education and training provider.



Association of technology industries.



Automation and industrial solutions provider.



Technical education and training institution.



Hellenic Mediterranean University, specialising in technology and applied sciences.



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RUSE CHAMBER OF COMMERCE AND INDUSTRY

Industry association supporting business and innovation.

Together, we are committed to advancing Digital Twin technology education and fostering innovation in the manufacturing sector.



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STAY TUNED FOR MORE UPDATES!

As the course development progresses, we'll continue to share updates and insights into the modules and the opportunities they will provide. If you're interested in learning more about the Digital Twin on Smart Manufacturing project, stay connected with us through our website and social media channels.

CONTACT US :



www.digitaltwinproject.eu



hello@digitaltwinproject.eu



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Thank you for being a part of our journey towards a smarter, more sustainable future in manufacturing!



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