

# International Week – BIP

## Digital Manufacturing: Technologies and Management

**From Monday 14 to  
Friday 18 March 2022**

**Free University  
of Bozen-Bolzano**

**Room  
F6 – University Club**

### Target audience

Bachelor and Master students of Mechanical Engineering, Management Engineering, Electromechanics, Electronics-ICT, Mechatronics and Environmental Sciences.

### Activities

- Lessons and exercises
- Virtual labs
- Project works (presentations)

### Topics

- Introduction to Industry 4.0
- (Collaborative) Robotics
- Mechatronics and Additive Manufacturing
- Assistance Systems
- Cyber-Physical Systems and Security Issues
- Managing Industry 4.0 Transformation

### Registration deadline

15 January 2022

The International Week is part of a new Blended Intensive Program (BIP) that will run between 1<sup>st</sup> March and 30<sup>th</sup> April 2022.

### More information

[www.unibz.it/en/events/-39102-blended-intensive-program](http://www.unibz.it/en/events/-39102-blended-intensive-program)  
(coming soon)



# Digital Manufacturing: Technologies and Management

## Monday 14<sup>th</sup> March 2022 – Introduction to Digital Manufacturing

09.00 – 09.30 Welcome

09.30 – 10.15 Industry 4.0: what's next - a glimpse into the future (D. Matt – unibz/Fhl)??

10.15 – 11.00 Main technologies of I4.0 (E. Rauch - unibz)

11.00 – 11.30 Break

11.30 – 12.30 Introduction to the group work

12.30 – 13.45 Lunch

## Monday 14<sup>th</sup> March 2022– Managing digital manufacturing technologies

13.45 – 15.15 Implementation of I.40 technology from a management/organizational point of view (G. Orzes - unibz)

15.15 – 15.30 Break

15.30 – 17.00 Impact of Industry 4.0 on production systems (R. de Castro and A. Bikfalvi - UdG)

## Tuesday 15<sup>th</sup> March 2022 – (Collaborative) Robotics and digital twins

09.00-09.45 (Industrial) Robotics: evolution and trends (Gasparetto – uniud)

09.45-10.30 Introduction to collaborative robots and safety standards – part A (E. Smet, – UAntwerp)

10.30-11.00 Break

11.00-11.45 Introduction to collaborative robots and safety standards – part B (E. Smet, – UAntwerp)

11.45-12.30 Collaborative Robotics: examples and applications

12.30 – 13.45 Lunch

13.45-15.15 Industrial Digital Twins (Marquez-Barja, UAntwerp & IMEC)

15.15 – 15.45 Break

15.45-17.30 Smart Mini Factory Lab Demos: collaborative robotics and digital twin (E. Rauch / R. Vidoni - unibz)

## Wednesday 16<sup>th</sup> March 2022 (at NOI Techpark) Assistance and Vision Systems

09.00 – 09.45 Worker assistance systems in production (B. Mark, unibz)

09.45 – 10.30 Worker assistance systems in construction (P. Dallasega/A. Revolti, unibz)

10.30 – 11.00 Break

11.00-12.00 (online) Machine Vision and Learning for automatic yarn inspection (M. Masias - UAntwerp)

12.00 – 13.15 Lunch

13.15 - 14.45 Safety control in robotic manipulator visual servoing system (C. Copot, UAntwerp)

14.45 – 15:00 Break

15.00-17.30 NOI Techpark Lab Tour and Demos

## Thursday 17<sup>th</sup> March 2022 – Additive Manufacturing

09.00-10.30 Introduction to Additive Manufacturing (C. Cappellini - unibz)

10.30-10.45 Break

10.45-12.15 Digital Modelling and Additive Manufacturing with Polymeric Materials (N. Blanco and I. Ferrer - UdG)

13.00 – 14:15 Lunch

14.15 – 15.15 (online) Modeling technologies for Industry 4.0 (J. M. Lopez-Guede, UPV/EHU)

15.15-17.30 Group work

**Friday 18<sup>th</sup> March 2022 – Optimization**

09.00 – 10.30 Introduction to Optimization Concepts and Algorithms (N. Van Oosterwyck, UAntwerp)

10.30 – 11.00 Break

11.00 – 12.30 FEA, optimize your design towards strength (P. Arras, KU Leuven)

**Friday 25<sup>th</sup> March 2022**

14.00-15.30 (online) Group work

**Friday 1<sup>st</sup> April 2022**

14.00-15.30 (online) Group work

**Friday 15<sup>th</sup> April 2022**

14.00-15.30 (online) Group work

**Friday 22<sup>nd</sup> April 2022**

09.00-11.00 (online) Group work presentations