

# Teaching Factory



## *Teaching Factory Competence Center*

*Upskilling and Training,  
Development and Implementation  
of Advanced Technologies  
for the Manufacturing Industry*



*Membership*

# Mission



- 🎯 Enable the knowledge sharing among the academia and industry.
- 🎯 Create added value through innovative technologies and research activities.
- 🎯 Exploit Research Results towards Industrial Applicability.
- 🎯 Focus on Deep Tech

## Channels of Knowledge

Manufacturing Industries

Technology Provides

RTOs and Universities

Membership



# Technological Areas

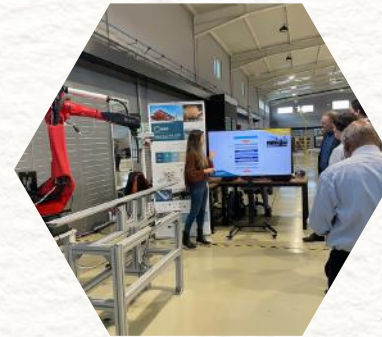


**Area 1: Digitalization & Industrial Automation**

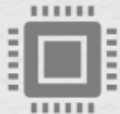
**Area 1: Digitalization & Industrial Automation**

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# Services



Technical



Consulting



Training



EIT Manufacturing



# Premises





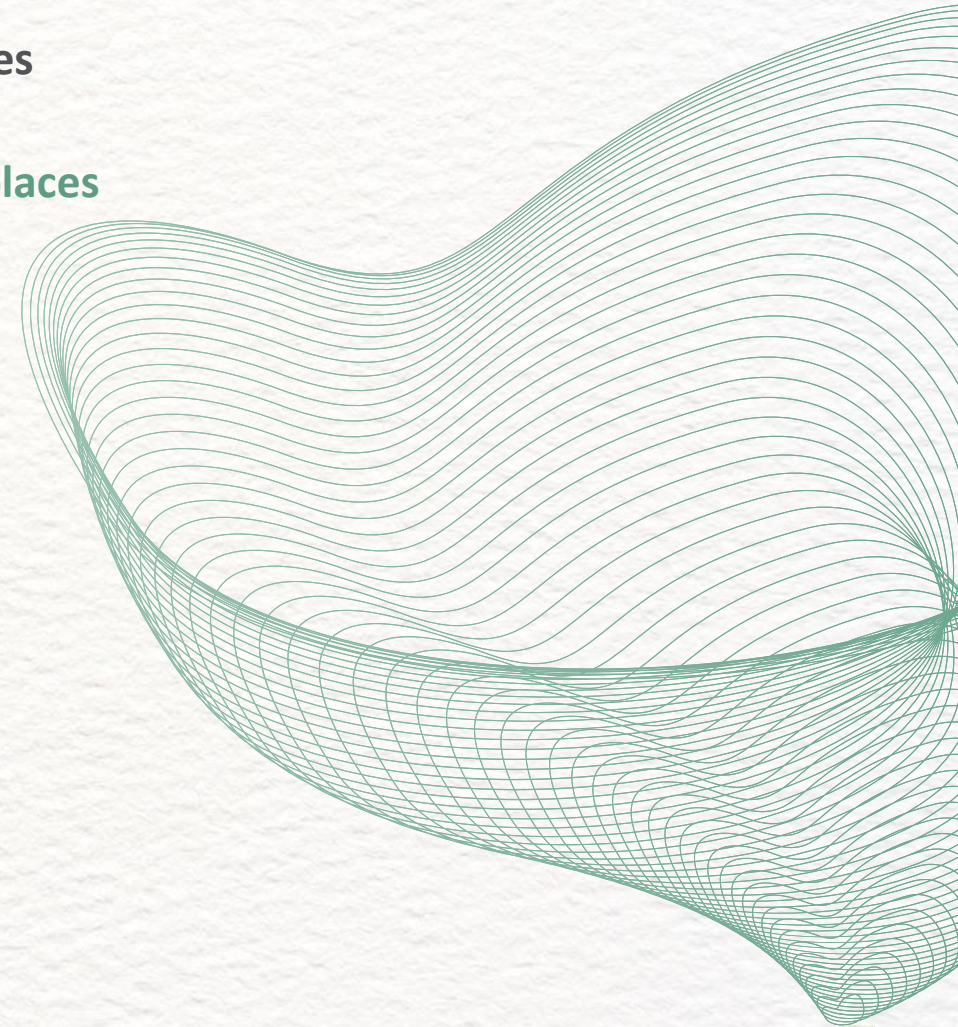
# *Training Services*

## «Health & Safety in the context of Industry 4.0» Training Services

 **Industry 4.0 Technologies for Health and Safety in Workplaces**

 **First aid at Work**

 **«Autonomous collaborative robots» Training Service**



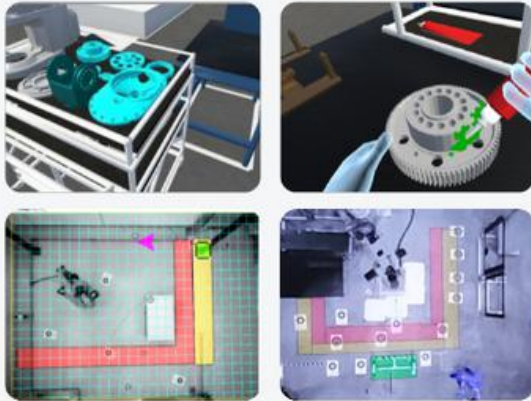


«Industry 4.0 Technologies  
for Health and Safety in Workplaces»  
🎓 Training Service



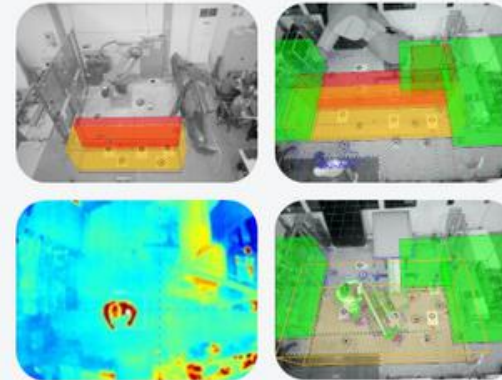


## Virtual Reality: Enabler of Human Centered Manufacturing



- ✓ Ergonomics-based workplace design
- ✓ Ergonomics analysis in production station using sensorial systems
- ✓ Operator safety at industrial environments
- ✓ Uninterrupted production thanks to parallel training

## Human Tracking for Safety



- ✓ Fail-Safe monitoring system
- ✓ Safety Distance Calculation
- ✓ Problem Description and Hazard Identification
- ✓ Safety Devices
- ✓ Safety Distance Calculation
- ✓ Connection Schemes
- ✓ Layout Design

## Ergonomics Design & Analysis

### Inefficient layouts

- ⚠ Bottlenecks
- ⚠ Congestion and poorly used space
- ⚠ Idle or overloaded job posts

- ✗ Anxiety
- ✗ Accidents
- ✗ Management difficulties



### Re-Design of a layout

- ✓ Operators Health
- ✓ Hazards Elimination
- ✓ Productivity improvement



## Sessions



## Intended Audience

Engineers

Design Engineers

Companies

Individuals /Students



# «Health & Safety in the context of Industry 4.0» Training Services



«First Aid at Work»  
Training Service





## Objectives



Creating a safer Working Environment



Promoting Safety Culture



Upskilling of First Aid Providers at Work

## Key features



Counselling support

Tailor-made Training

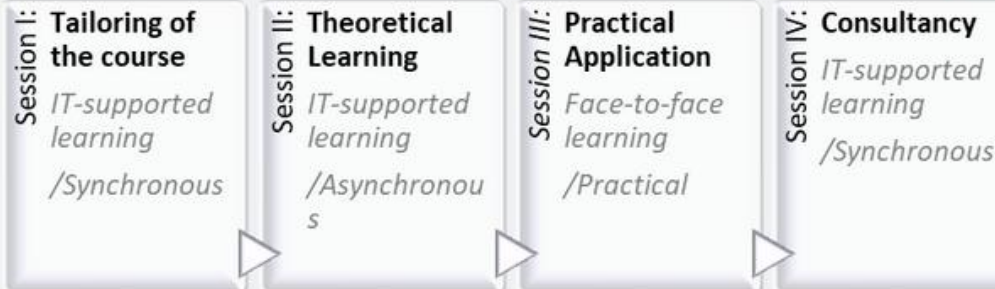
Theoretical & Practical training

Quality feedback & guidance

Technologically Advanced equipment

Input of qualified instructors

## 4 Sessions



## 4 Topics



### Basic Life Support

- Basic Life Support (Cardiopulmonary resuscitation - CPR)
- Use of an Automatic External Defibrillator (AED)
- Resuscitation Position



### Bleeding Control

- Direct pressure, elastic bandage
- Israeli bandage, tourniquet, Improvised tourniquet,
- Nasal packing, Hemostatic



### Multiple Trauma Management: Immobilization and Transport

- Scene Safety – Extrication
- Immobilization of the spine
- Safe transport of the injured on a stretcher
- Falling from a height



### Musculoskeletal injuries

- Immobilization in:
  - Sprain- Dislocation
  - Injuries and Fractures of Upper Extremities
  - Pelvic Injuries and Lower Extremity Fractures
- Wound care, Cleaning-bandaging

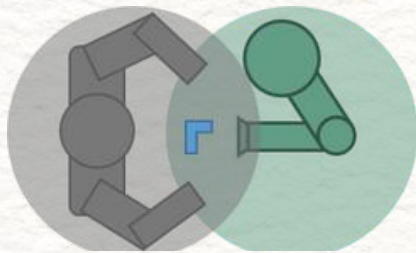


# «Autonomous collaborative robots» Training Service

The “Autonomous collaborative robots” training service is designed mainly for industries that want to incorporate or extend the digitalization concept and lean manufacturing concept by enriching their equipment and services with cutting-edge technologies.

The indented audience consists of:

- Production engineers
- Operation managers
- Safety engineers
- System integrators
- Individuals/Students



The training includes three sessions:

- Session I: Introduction to Collaborative Robotics | IT-supported, Theoretical
- Session II: Hands-on training and practical experience | Face-to-face, Practical
- 4 Topics: a) Collaborative workplace design, b) Perception skills for collaborative robots, c) Easy programming and integration, d) Human-Robot interaction methods and applications
- Session III: Summary and potential applicability | IT-supported, Consulting

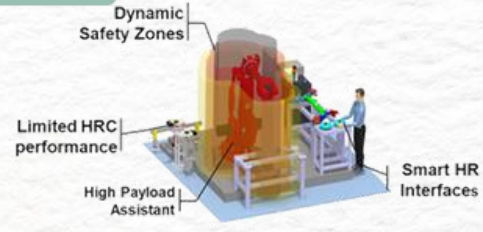


Objectives

- Gain expertise in the use of **Autonomous collaborative robots**.
- Gain a deeper understanding of human-robot interaction in **production**.
- Prepare the technical staff for **tailored solutions for specific pilot cases**, that improve **product design and manufacturing efficiency**.
- Explore ways to **reduce working accidents, minimize and efficiently address risks** (especially new and emerging).
- Get closer to the enhancement of human **well-being, workplace health, and job satisfaction**.
- Detect ideas to create **collaborative working environments**.

Collaborative workplace design

- ❖ Workspace Cognition
- ❖ Task and motion planning
- ❖ Human Safety
- ❖ Human-Robot Interfaces



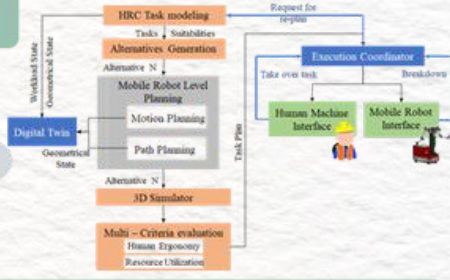
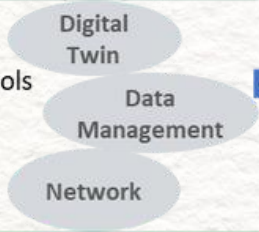
Perception skills for collaborative robots

- ❖ Feature matching
- ❖ Color/ Edge Detection
- ❖ Volume Calculation
- ❖ Discontinuities Detection

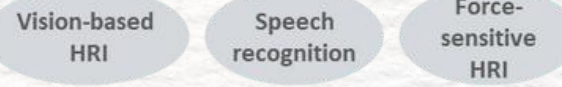


Easy programming and integration

- ❖ Decision-making tools
- ❖ HRC Task modeling
- ❖ Control Devices



Human-Robot interaction methods and applications







- ❖ Collaborative Workstation for Assembly
- ❖ Augmented Reality information panels and highlighted areas
- ❖ Augmented Reality model representation







## Contact us

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