



MSc

# People and Robots for Sustainable Work



Co-funded by the  
European Union

# Global manufacturing Innovation will be led by Europe

EIT Manufacturing's mission is to bring European manufacturing actors together in innovation ecosystems that add unique value to European products, processes and services and inspire the creation of globally competitive and sustainable manufacturing.

The European Institute of Innovation and Technology (EIT) is an EU body created in 2008 to strengthen Europe's ability to innovate. Today it is Europe's largest innovation ecosystem with over 2,000 partners.

The EIT supports the development of dynamic, long-term thematic partnerships (Knowledge and Innovation Communities, EIT KICs) among companies, research and higher education institutions, to face specific societal challenges.

Together with their leading partners across Europe, the EIT Community offers a wide range of innovation and entrepreneurship activities across Europe:

Entrepreneurial education courses, business creation and acceleration services and innovation driven research projects. The EIT Community helps innovators turn their best ideas into cutting-edge products, services and jobs for Europe.

Unique EIT model highlights:

- Provides access to a community that powers innovators through the entire innovation journey, from education to lab to market
- Embraces disruptive and incremental innovation and embeds entrepreneurial education activities in its innovation activities
- Business-oriented with strong focus on financial sustainability
- Delivers a pan-European network strongly anchored in local innovation ecosystems.

EIT Manufacturing is an Innovation Community within the European Institute of Innovation & Technology (EIT) – that connects the leading manufacturing actors in Europe. Fueled by a strong interdisciplinary and trusted community, we will add unique value to European products, processes, services – and inspire the creation of globally competitive and sustainable manufacturing.

EIT Manufacturing's approach is designed to immediately and forcefully address specific economic and societal challenges, leveraging opportunities to maximise the impact for a successful European manufacturing.

Our vision is that the global manufacturing innovation is led by Europe.

Our mission is to bring manufacturing actors of Europe together in innovation ecosystems that add unique value to European products, processes, services – and inspire creation of globally competitive and sustainable manufacturing.



**EIT Manufacturing Headquarters**  
Paris

**CLC Central**  
[Darmstadt]

**CLC South**  
[Milan]

**CLC West**  
[San Sebastian]

**CLC North**  
[Gothenburg]

**CLC East**  
[Vienna]

In addition, dynamic growing number of R

**The programme**

**University partners**

**The syllabus**

**Admission and Finance**

**Faculty Members**



# GENERAL INFORMATION

**Locations:** Austria, Spain, Switzerland

**Duration:** 2 years

**Application deadline:** 1st March 2022

**Language:** English

**Study Type:** Campus

**Pace:** Full-time

## What is this programme about?

People and Robots for Sustainable Work (PR) is a program combining manufacturing science, robotic system physics and control system automation, including the design of customized manufacturing processes and production management.



What are the obtained diplomas?

2 Master's Degrees (issued by the entry and exit universities)

An EIT Label Certificate

## Entry University



**Mondragon  
Unibertsitatea**

**Goi Eskola Politeknikoa  
Faculty of Engineering**

University of Applied Sciences and Arts  
of Southern Switzerland

# SUPSI

## Exit University



**TECHNISCHE  
UNIVERSITÄT  
WIEN**  
Vienna | Austria

# PARTNER UNIVERSITIES



Mondragon  
Unibertsitatea

Goi Eskola Politeknikoa  
Faculty of Engineering

Mondragon Unibertsitatea is a University of social initiative and social vocation, non-profit making and declared of public interest. Committed since its foundation to quality education and studies with a practical focus, they give great importance to the comprehensive training of their students

University of Applied Sciences and Arts  
of Southern Switzerland

# SUPSI



The University of Applied Sciences and Arts of Southern Switzerland (SUPSI) is one of the nine professional universities recognised by the Swiss Confederation. Founded under federal law, SUPSI offers more than 30 Bachelor's Degree and Master's Degree courses, characterised by cutting edge education which unites classical theoretical-scientific instruction with a professional orientation. Great care is given to research, carried out in key sectors on competitively acquired projects with large European and national agencies or mandated by organisations and institutions.



TECHNISCHE  
UNIVERSITÄT  
WIEN  
Vienna | Austria

The TU Wien is Austria's largest research and educational institution in the field of technology and natural sciences. More than 4,000 scientists are researching "technology for people" in five main research areas at eight faculties. The content of the studies offered is derived from the excellent research. More than 27,000 students in 55 degree programmes benefit from this. As a driver of innovation, TU Wien strengthens the business location, facilitates cooperation and contributes to the prosperity of society.

# SYLLABUS\*

Type of Modules	Total Credits for EIT Manufacturing Master	Total credits Year 1	Total Credits Year 2
Technical courses	45	40-50	10-20
Specialization courses	15		
Innovation & entrepreneurship courses	30	10-20	10-20
Master Thesis	30	0	30
Total	120	60	60

\* The syllabi presented are indications of the classes for the year and may differ

<b>YEAR 1</b>	
<b>MONDRAGON UNIBERTSITA TEA</b>	
Semester 1	Semester 2
Data Analytics	Electromechanical Drives
Robotics: Mechanics, Modelling and Simulation	Internet of Things Technologies
Digital Control Systems	Signal Processing
Sensors and Measurements	Perception
Artificial vision	Mobile Robotics
Deep Learning	Robotic Control Systems
Robot Programming	Innovation Management
Professional Placement I	Alternative project management approaches
Professional Placement II	
Professional Placement	
Integrated project activity	

<b>SUPSI</b>	
Semester 1	Semester 2
Model Predictive Control	Industrial control
Ordinary Differential Equations and Dynamical Systems	Modelling Simulation and Optimization
Integrated Sustainable Management of Production Systems	Integrated Automation
Project on Human Robot Collaboration	Applied Statistics and Data Analysis
Advanced Robotics	Multi-agent systems
Innovation and Lean	Advanced Robotics II
Project on Robotics and Automation	

<b>YEAR 2</b>	
<b>TU WIEN</b>	
Semester 1	Semester 2
Assistance Systems in Manufacturing I	Assistance Systems in Manufacturing II
Cobot Studio @Pilot Factory for Industry 4.0	Product Lifecycle Management
Digital Simulation of Ergonomics and Robotics	
Machine Vision and Cognitive Robotics	
Innovation Theory	
Robot Challenge	
<b>Master Thesis</b>	

# ADMISSION



## Who can apply to the Master school?

- Students who have a Bachelor of Science Degree of 180 ECTS in a the field related to the four tracks described above
  - Students in their final year of Bachelor of Science studies may also apply and if qualified, receive a conditional acceptance. They will have to present their degree certificate to the entry university before enrolment, at the latest.
    - The specific required admission diplomas are:
      - o B.Sc. degree in Mechanical Engineering, Electrical Engineering, Computer Engineering, Business Engineering, Computer Science, Information Technology or Industrial Engineering or equivalent degree.
  - Students Bachelor of Science degree **must** provide the student with basic competence in the following fields:
    - o engineering analysis, programming, and mathematics including calculus, algebra, and mathematical statistics.
  - Students who are fluent in English (English level evaluated by TOEIC, TOEFL ...)



# FINANCE AND SCHOLARSHIPS

Tuition fees:

8,000€ for EU/EFTA candidates

15,000 for non EU/EFTA candidates

Fees include all programme expenses and insurance but do not cover living expenses and local university text books.

## How are scholarships awarded?

Scholarships may include: mobility grant, subsistence costs support and fee waivers. Scholarships are awarded to a sub-set of students based on a ranking that considers:

- Academic grades
- Gender
- RIS countries citizenship\*
- Study track

All students are eligible for scholarships and they don't need to present any specific request for it. The EIT Manufacturing Master School will rank the students and offer the scholarships at the time of the student admission.

- RIS countries: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain.





# A WORD FROM THE EIT MANUFACTURING



**Paola FANTINI**

Education Director EIT Manufacturing

In the EIT Manufacturing Master programmes, students will gain the capabilities, opportunities and support from the network to become real entrepreneurs and change makers, to pursue the career they want to take. They will learn to question the status-quo, identify challenges and opportunities, mobilize energies, develop and promote innovative solutions. They will become skilled at dialoguing, reasoning and negotiating with peers and other stakeholders, in addition to acquiring excellent technical and business competences.



**Lucia RAMUNDO**

Master and PhD Program Manager

Our programmes allow students to become experts in innovative manufacturing fields from both from both the technological and business and management side. We develop their leadership, creativity and all soft skills needed to navigate the complex industrial landscape while also taking into account the needs of society.

The Master in People and Robots for Sustainable Work programme is a Master of Science level programme within the EIT Manufacturing Master School. The EITM Master School is a highly prestigious Manufacturing Engineering and Science education provider on an advanced level with a focus on Innovation and Entrepreneurship (I&E). The education at EIT Manufacturing Master School combines technical competence with skills in Innovation and Entrepreneurship. EIT Manufacturing Master School students will be an elite group of forthcoming engineers, operators, innovators, and other relevant professionals.

**EIT MANUFACTURING**

Headquarters  
Paris-Saclay,  
Nano-INNOV,  
2 Boulevard Thomas Gobert,  
91120 Palaiseau, France

CLC West  
Donostia/San Sebastian  
[clcwest@eitmanufacturing.eu](mailto:clcwest@eitmanufacturing.eu)

CLC Central  
Darmstadt  
[central@eitmanufacturing.eu](mailto:central@eitmanufacturing.eu)

CLC North  
Gothenburg  
[info\\_north@eitmanufacturing.eu](mailto:info_north@eitmanufacturing.eu)

CLC South  
Milan  
[clcsouth@eitmanufacturing.eu](mailto:clcsouth@eitmanufacturing.eu)

CLC East  
Vienna  
[east@eitmanufacturing.eu](mailto:east@eitmanufacturing.eu)



# Making innovation happen!

## About EIT Manufacturing

EIT Manufacturing is an Innovation Community within the European Institute of Innovation & Technology (EIT) – that connects the leading manufacturing actors in Europe. Fueled by a strong interdisciplinary and trusted community, we will add unique value to European products, processes, services – and inspire the creation of globally competitive and sustainable manufacturing.

Keep up with the latest on:

[masterschool@eitmanufacturing.eu](mailto:masterschool@eitmanufacturing.eu)



Co-funded by the  
European Union