Co-funded by the European Union

Call for Proposals
for Activities to be executed in 2023

ANNEX B
Pioneering Learning Journeys Details
Version 1.0

EIT Manufacturing

Paris-Saclay, France | 2022-02-09
www.eitmanufacturing.eu

Contents

1. Pioneering Learning Journeys Special Conditions

The following conditions apply to all the sub-segments of Pioneering Learning Journeys, the subsequent chapters include the specific conditions for each sub-segment.

Pedagogical Approach: Learning by Doing approach is required with strong focus on all OLOs (see sections 2.2 and 3.4), manufacturing societal challenge systemic view and business exploitation projects, based on real industrial challenges, provided by industries. Novel pedagogical approaches (gaming, AI/VR, hackathons etc.) are encouraged, also for activities listed as seminars. Moreover, experts from different fields are welcome (science, art, game, sport, makers, press, influencers etc.), but the students must be able to contextualize their new skills and capabilities inside manufacturing sector and associated societal challenges. Inclusion of T&L factories and networking opportunities with industries are also strongly encouraged. Students must be allowed to get reflection tools and time about their new skills and capabilities.

Quality review: A specific quality review plan of the whole summer/winter school organization and programme must be included into the proposal.
Evaluation of students OLOs achievement and activity quality review by the learners and teachers must be included. A students evaluation committee made of Scientific and Industrial representative experts must be appointed.

1.1. Summer School for EITM Master School programmes – 2023

Partnership: Master School University partners are only those ones already members of the Master School consortium at the time of the opening of the first stage of this call 2023. External organizations and professional not associated to EITM can join either as external partners, willing to pay the affiliation fee to EIT Manufacturing for year 2023, or as subcontractors, in this case they will be selected by the winning consortium through public procurement. In the case of subcontracting collaboration choice, external experts about I&E education can register into the Education I&E expert portal, to have more visibility towards consortium partners:
https://plaza.eitmanufacturing.eu/PROMISE/PRIVATE/FORMS/form.aspx?guid=5EB71D55-07D2-4278-9339-E135FEDEA9C5

Demonstrated engagement and active participation (teaching, networking, provide industrial challenges etc.) of minimum 3 companies and 3 external I&E experts (both professionals and companies are allowed). An educational I&E expert must be appointed as supervisor (Programme Coordinator) of the Summer School programme. This role can be done by a consortium partner or by an external expert, eventually through subcontracting. In this second case the consortium must present the criteria for the educational I&E supervisor selection. A

students evaluation committee made of Scientific and Industrial representatives, expert in I&E, must be establish as well for students OLOs evaluation (see also Quality review special conditions).

Logistics: More than one location is allowed for the activities on site. EITM Master students accommodations paid by the grant; travels to/from summer school location(s) are excluded. External students must organize travel and accommodation by themselves. Organizer must organize EITM Master students accommodation and provide support to find accommodation to other external students. Travel expenses (not accommodation expenses) during summer school (for instance for company visits and social activities) are under organizers responsibility and are covered by the grant for all students.

Digital Learning: Digital learning content modules development to be provided to the students before the starting of the Summer School for a knowledge common baseline or to be used during the summer school activities is also encouraged. The resulting material will be included into the EITM Skill.move platform for future re-use and treated according to platform guidelines. The participants must check that the content is not already available in Skill.move. If the content is similar to already existing nuggets and learning path, it can be approved, if it uses a different pedagogical method and approach.

Communication & dissemination plan: A communication and dissemination plan must be provided for the programme, including the active participation of the participating students, I&E experts, industrial partners, teachers and other stakeholders. Participants success stories must be collected and highlighted during the communication campaign. A communication and dissemination programme for the EITM Social Media channels and the EITM communication other channels, such the website, Agora etc. must be prepared by the consortium and forwarded to the EITM Master School office.

1.2. Doctoral School annual programme – 2023

Partnership: Doctoral School University partners are only those ones already members of the Doctoral School consortium at the time of the opening of the first stage of this call 2023. External organizations and professional not associated to EITM can join either as external partners, willing to pay the affiliation fee to EIT Manufacturing for year 2023.
External experts about I&E education can register into the Education I&E expert portal, to have more visibility towards consortium partners and EITM:
https://plaza.eitmanufacturing.eu/PROMISE/PRIVATE/FORMS/form.aspx?guid=5EB71D55-07D2-4278-9339-E135FEDEA9C5

Logistics: Organizers are not responsible for providing travel arrangements. Participants will arrange their own travel to/from the location and the accommodation expenses. Only travels for the on site activities execution are eligible by the grant, including travels for networking sessions, company visits and social programme. The same rules are valid for other kind of programme activities along the year round, such as seminars, etc. In any case, for onsite activities, such as Summer/Winter school/, the consortium must provide logistic coordination, including support

for finding accommodation, on site working space for courses, projects and hands-on activities, site visits, social programme etc. More than one location is allowed for the activities on site.

Digital learning: blended activities are allowed. Digital learning content modules development to be provided to the students before the start of specific activities for a knowledge common baseline or during the programme activities is also encouraged. The resulting material will be included into the EITM Skill.move for future re-use, and treated according to Skill.move guidelines. The participants must check that the content is not already available in Skill.move. If the content is similar to already existing nuggets and learning path, it can be approved, if it uses a different pedagogical method and approach.

Programme: Industrial connection with students are encouraged.

Marketing, Communication & Dissemination: a communication and dissemination plan must be provided for the programme. The consortia will execute the marketing, communication and dissemination activity during the programme providing the content description of the activities, the content for the communication to EITM Doctoral School for the publication on EITM SoMe channels, website and other communication tools such as newsletter etc. Participants success stories must be collected by the consortia and highlighted during the communication campaign. The communication and dissemination will be supported by the EITM Doctoral School office for the publication on EITM SoMe channels, website and other communication tools such as newsletter etc. The communication and dissemination activities will be integrated with the entrepreneurship part of the programme coordinated by the EITM Doctoral School office.

1.2.1. Spring/summer 2023 programme (6,5 ECTs)

Delivery time: January – August 2023

Delivery mode: in presence/blended and online. Summer school can be done either "in presence" or in blended mode, meaning part in presence and part on line. Anyway for "in presence" activities, a risk plan must address a detailed alternative in case the COVID-19 situation (or other cases) won't allow to have the programme as planned. Webinars are delivered on line.

Please note ECTS are considered toward student/group of students-class.

Three webinars (or series of) (0,75 ECTS in total) to be delivered between May and June 2023 about:

- "Manufacturing and industrial insights and tendencies" - min. 0.25 to be delivered in May.
- "Prototyping design constraints and industrial feasibility – min 0.25 ECTs to be delivered in June
- "Human, Resilient and Sustainable Manufacturing" technology, industrialization and innovation - min 0.25 ECTs to be delivered in June

Each webinar must include: eventual preparation material and homework, on line training session (min. 2 hours), student reflection time, student skills assessment.

A Summer School delivering the following activities along 2 weeks minimum time during end of June and July:

- Summer Symposium (1 ECTS, including student material preparation. Min 0,3 ECTS in presence)
- One or more interactive and hands on Seminars/workshops about:"Scientific cutting-edge technologies and research methods" in relation to the manufacturing main topic of this segment (1 ECTS);

  Each seminar/workshop can include offline preparation and student reflection time. They must include student skills and knowledge assessment.

- Ecosystem connections, Mentorship & best practices by industrial partners & networking event: networking activity series (1 ECTS)
- Social and networking programme must be included, on top of mandatory networking activities with industries
- Hosting space and logistic coordination for the following entrepreneurship programme sessions, for an average of 40 students each:
  - Design research bootcamp (1,5 ECTS)
  - Hackathon (1 ECTS)
  - Closure of Validation programme (1,25 ECTS)

Mentorship & coaching (0,5 ECTS per student/group of students) to be delivered along the project activities, webinars included: Industrial and Scientific mentors to support students/group of students along the programme

1.2.2. Autumn/winter 2023 programme (5,5 ECTS):

Delivery time: August – December 2023

Delivery mode: in presence/blended and online. Winter school can be done either "in presence" or in blended mode, meaning part in presence and part on line. Anyway for "in presence" activities, a risk plan must address a detailed alternative in case the COVID-19 situation (or other cases) won't allow to have the programme as planned. Webinars are delivered on line.

Please note ECTS are considered toward student/group of students-class.

Webinar series (0,5 ECTS in total minimum) to be delivered in October about:

- Ideating and designing with a sustainable, social and ethical mindset (0,25 ECTS)
- Technology as a driver for solution design (0,25 ECTS)

Each webinar must include: eventual preparation material and homework, on line session training (min. 2 hours), student reflection time, student skills assessment.

A Winter school delivering the following activities along 2 weeks minimum time in the second part of November and/or beginning of December:

- One or more interactive and hands on seminars/workshops for a total of 1 ECTS about:

- "Protecting your business through IPR"
- "Human-centric manufacturing"
- "Resilient manufacturing"
- "Sustainable manufacturing"

Each seminar/workshop can include offline preparation and student reflection time. They must include student skills and knowledge assessment.

- Ecosystem connections, mentorship & best practices by industrial partners & networking event: networking activity series (1 ECTS)
- Social and networking programme must be included, on top to mandatory networking activities with industries
- Hosting space and logistic coordination for the following entrepreneurship programme sessions, for an average of a 40 students class:
  - "Creativity & ideation bootcamp" hosting space and logistic coordination support (1,5 ECTS)
  - Entrepreneurhip workshop and pitch event (0,4 ECTS)
  - Pitching session and closing of Venture Programme (0,4 ECTS)
  - Closing graduation ceremony for distribution of EIT label certificates (0,2 ECTS).

Mentorship & coaching (0,5 ECTS per student/group of students) to be delivered along the project activities, webinars included: Industrial and Scientific mentors to support students/group of students along the programme.

2. Master School programmes and OLOs

EITM Master School outlook

The EIT Manufacturing Master School offers a unique and excellent high education programme, with international and inclusion mindset, to graduate the next generation of Manufacturing Innovators and Entrepreneurs. The Master School programmes merge manufacturing technical and technological aspects with innovation and entrepreneurship teaching, in the context of the global societal challenges, such as circular economy, industrial innovation, sustainability, and so on. The EIT Manufacturing Master School adopts a practical learning by doing approach, through activities at Teaching and Learning Factories, through internships, projects and thesis at industrial premises, and through Innovation and entrepreneurship focused Summer Schools, in order the students to put immediately in practice the new knowledge, gathered in the class, in a real work and research context. The international studies at two different universities and the interaction with the EIT Manufacturing community complement and complete the educational offer.

All EIT Manufacturing Master School programmes allow the students to develop:

- Capability to implement engineering expertise and advanced technologies to create new or improved methods, techniques, products and services in the manufacturing field, in line with the customer target sector and the global societal challenges.
- Transversal skills and capabilities, such as constructive communication, leadership, complex problem setting, problem solving and decision making, to collaborate in international and diverse contexts, to manage projects and teams, to find new solutions and innovate the manufacturing offer.
- Business understanding and entrepreneurship to boost their future careers and to create innovative start-ups.

These capabilities are defined for the Master School programmes directly by the EIT through specific Overarching Learning Outcomes (OLOs), defined in the next section of this annex.

The EIT Manufacturing Master School Programmes are:

- People and Robots for Sustainable Work
- Additive Manufacture for Full Flexibility
- Zero-Defect Manufacture for a Circular Economy
- Platforms for digitalized value networks
- Data Science ad AI for Competitive Manufacturing

At the end of their studies the students receive two degrees directly by the universities (double degree) and the EIT label certificate from EIT Manufacturing, as an international recognition of their high-quality education curriculum.

The current pre-call and call focus on collecting proposals that will deliver:

- The mandatory Summer School (focused on I&E), that EITM Master School students must attend between first and second year, in 2023

EITM Master School have free access to all those I&E modules. They are open to external students under a specific fee to be proposed during the proposal preparation by the consortium. The final fee will be decided by the EITM Master School Head.

2.1. Master School partner Universities

In case partnership requires to include one or more of the EITM Master School partner Universities, you can find their public contacts at EIT Manufacturing partners web page: Master School - EIT Manufacturing

List of those partners is available here below.

Aalto University School of Engineering	Aalto University (Aalto), Finland
CENTRALE NANTES	Ecole Centrale de Nantes (ECN), France
Mondragon Unibertsitatea Goi Eskola Politeknikoa Faculty of Engineering	Mondragon Unibertsitatea (MU), Spain
POLITECNICO MILANO 1863	Politecnico di Milano (POLIMI), Italy
University of Applied Sciences and Arts of Southern Switzerland SUPSI	University of Applied Sciences and Arts of Southern Switzerland (SUPSI), Switzerland
TU WIEN TECHNISCHE UNIVERSITÄT WIEN	Technische Universität Wien (TU Wien), Austria
UCD DUBLIN	University College Dublin (UCD), Ireland
GRENOBLE INP UGA	Grenoble Institute of Technology and Management (G INP)
UNIVERSITY OF TRENTO	University of Trento

2.2. Overarching Learning Outcome (OLO) for EITM Master School Programmes

EIT Overarching Learning Outcome (OLOs): see table below

EIT OLOs
EIT OLO 1 - Making value judgments and sustainability competencies
The ability to identify short- and long-term future consequences of plans and decisions from an integrated scientific, ethical and intergenerational perspective and to merge this into a solution-focused approach, moving towards a sustainable society.
EIT OLO 2 - Entrepreneurship skills and competencies
The ability to translate innovations into feasible business solutions.
EIT OLO 3 - Creativity skills and competencies
The ability to think beyond boundaries and systematically explore and generate new ideas.
EIT OLO 4 - Innovation skills and competencies
The ability to use knowledge, ideas and technology to create new or significantly improved products, services, processes, policies, new business models or jobs.
EIT OLO 5 - Research skills and competencies
The ability to use cutting-edge research methods, processes and techniques towards new venture creation and growth and to apply these also in cross- disciplinary teams and contexts.
EIT OLO 6 - Intellectual transforming skills and competencies
The ability to transform practical experiences into research problems and challenges.
EIT OLO 7 - Leadership skills and competencies
The ability of decision-making and leadership, based on a holistic understanding of the contributions of higher education, research and business to value creation, in limited sized teams and contexts.

3. Doctoral School programmes and OLOs

The EITM Doctoral School (DS) offers an annual innovation & entrepreneurship programme to Ph.D. students, to prepare them to create start-ups, to be leaders of innovation within manufacturing companies and ecosystem, and to contribute to European competitiveness and environmental sustainability. This call relates to the organization of this specific annual programme for 2023.

3.1. EITM Doctoral School Programme structure

The structure of the Doctoral School annual programme about Innovation and Entrepreneurship include a series of on line and on site activities, including:

- Welcome ceremony (on-boarding of new students, not part of this call for proposals), Network-wide activities in collaboration with industries, startup and research centers.
- Seminars/webinars and hackathons, given through either on-line (using Skill.move) or face to face courses etc.
- Summer school: including a doctoral symposium where students can present their ongoing research activities and get feedback from peers.
- Winter school: students can get advanced knowledge and practice and present results of their work about Innovation and Entrepreneurship.
- Awareness & Orientation programme: dedicated to those Doctoral School students interested to develop innovative product/services, but not towards a business venture.
- Business Creation Venture programme: dedicated sessions offering to doctoral students working on manufacturing challenges across Europe and their own ideas of start-up from the results of their PhD studies. The goal of this programme is to help these doctoral students to strengthen their entrepreneurial spirit, to improve their creativity and system innovation skills. The programme includes training boot camps, company visits, business coaching, global networking events, and online resources.

The full annual programme must provide 30 ECTS equivalent in total, where 1 ECTS corresponds to 25 hours of training/activities in classroom and study time outside the classroom. The programme mainly focuses on , but is not limited to, the EIT Manufacturing thematic areas and Manufacturing main societal challenges objectives and for 2023 it has a specific focus on HUMAN, RESILIENT and SUSTAINABLE manufacturing

3.2. Who can apply

The call is open to EIT Manufacturing partners only. For Doctoral School partner universities, please see sub-section here below. I&E education experts can register to the EITM I&E database, to be considered

by the consortia and EITM:
https://plaza.eitmanufacturing.eu/PROMISE/PRIVATE/FORMS/form.aspx?guid=5EB71D55-07D2-4278-9339-E135FEDEA9C5

Please note experts don't need to have an account in the Plaza system to join the list of experts.

Partners can browse for expert from PLAZA:

3.3. Doctoral School partner Universities

Partnership must include at least one of the EITM Doctoral School partner Universities

You can find their public contacts at EIT Manufacturing partners web page: https://eitmanufacturing.eu/partners/

*Please note: For FEUP, contact is Gil Gonçalves: gil@fe.up.pt (being FEUP a LTP, the contact is not available at the partners web page).

List of those partners is available here below.

ARTS ET MÉTIERS ParisTech	Arts et Métiers Institute of Technology (Arts et Métiers)
CTU CZECH TECHNICAL UNIVERSITY IN PRAGUE	Czech Technical University of Prague (CTUP)
GRENOBLE INP UGA	Grenoble Institute of Technology and Management (G INP)
STU SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA	Slovak University of Technology in Bratislava (STUBA)
Universidade do Porto FEUP Faculdade de Engenharia	Faculty of Engineering of the University of Porto (FEUP)
TARTU ÜLIKOOL 1632 UNIVERSITAS TARTUENSIS	University of Tartu – Institute of technology (TARTU)

3.4. Doctoral School Overarching Learning Outcomes (OLOs)

EIT Overarching Learning Outcome (OLOs): see table below

EIT OLOs
EIT OLO 1 - Making value judgments and sustainability competencies
The ability to identify short- and long-term future consequences of plans and decisions from an integrated scientific, ethical and intergenerational perspective and to merge this into their professional activities, moving towards a sustainable society.
EIT OLO 2 - Entrepreneurship skills and competencies
The ability to translate innovations into feasible business solutions and to lead and support others in this process
EIT OLO 3 - Creativity skills and competencies
The ability to think beyond boundaries and systematically explore and generate new ideas and to inspire and support others in this process and contribute to the further development of those ideas.
EIT OLO 4 - Innovation skills and competencies
The ability to apply their research experiences combined with the knowledge, ideas and technology of others to create, test and implement new or significantly improved products, services, processes, policies, new business models or jobs.
EIT OLO 5 - Research skills and competencies
The ability to produce cutting-edge original research and to extend and develop cutting-edge research methods, processes and techniques towards new venture creation and growth also using cross-disciplinary approaches.
EIT OLO 6 - Intellectual transforming skills and competencies
The ability to autonomously and systematically transform practical experiences into research problems and challenges and to lead and support others in this process.
EIT OLO 7 - Leadership skills and competencies
The ability of decision-making and leadership based on a holistic understanding of the contributions of higher education, research and business to value creation.