

Double Degree PhD position from Politecnico di Milano (School of Management) and Universidad Politécnica de Madrid (Escuela Técnica Superior de Ingenieros Industriales)

The School of Management of Politecnico di Milano (POLIMI, Italy) in collaboration with the Escuela Técnica Superior de Ingenieros Industriales of Universidad Politécnica de Madrid (UPM, Spain), is currently seeking applicants for **one full-time PhD scholarship (4 years)**, starting from November 2021, on the following research project:

“The role of new digital technologies for Teaching and Learning Factories”

We are looking for a talented and motivated candidate with strong analytical and methodological skills in design and industrial engineering sciences, who is eager to engage in an interdisciplinary and international research project of relevance for both industry and academia.

Obtaining a **Double Degree PhD title** in Management Engineering at POLIMI and UPM requires meeting all the training requirements at both universities as well full time study and engagement in research activities to the four years' period.

The scholarship covers tuition fees, office facilities, and access to library, software and databases. Additionally, the candidate is offered her/his own research budget for travelling. Opportunities of teaching and tutoring BSc/MSc students are also foreseen during the PhD.

The **Department of Management, Economics and Industrial Engineering at POLIMI** has a strong commitment to the excellence, distinctiveness and relevance of its teaching and research activities. The Doctoral Program is highly international and POLIMI PhD graduates are held in high esteem - not only in academia - but also in public institutions and companies where their research qualifications are increasingly demanded. See our downloadable brochure for more detailed information about PhD Program at POLIMI:

<https://www.som.polimi.it/downloadbrochuremip/BROCHURE/PHD.pdf>

See also the Website of the Ph.D. Program: <https://www.som.polimi.it/en/course/phd/>

The mission of the **Escuela Técnica Superior de Ingenieros Industriales (ETSII) at UPM** is to prepare high-level professionals, with broad capacities to generate, integrate and apply scientific, technological and business knowledge in the industrial field, contributing to the construction of prosperous, inclusive, equitable and sustainable societies. The Doctoral Programme on Automation and Robotics obtained the "Quality Mention" since May 2003 (MCD2006-00375). See more details in:

https://www.etsii.upm.es/estudios/doctorados/automatica_robotica.es.htm

BRIEF DESCRIPTION OF THE RESEARCH PROJECT

Companies face increasingly complex challenges in managing the new digital manufacturing solutions within the Industry 4.0 context.

In the last years, industrial production systems are being transformed due to a higher level of digitalisation, which leads to intelligent and connected solutions.

This context requires training activity to prepare engineers to this new working environment. Laboratory activities play a key role for this type of training. In the recent years the concepts of Teaching and Learning factories have emerged and Industry 4.0 laboratories have been installed in many universities or existing laboratories have been upgraded or extended in accordance to Industry 4.0 concepts.

At the School of Management of Politecnico di Milano, the Industry 4.0 Lab “Marco Garetti” was established in 2016. The Lab was one of the first example of this facility in Europe, paving the way for researches in technical activities but also in the educational field, and leading to a potential to create new teaching paradigms. Likewise, the Lab GAMHE 5.0 of Universidad Politécnica de Madrid is a unique infrastructure in Madrid that enables experimentation in the whole value chain of Industry 4.0 paradigm. The research will be supported by these two laboratories, within a collaborative framework for the technological support and competence that could be required from their experience and context.

The research aims to define frameworks and tools to:

- Integrate digital technologies for sharing data, algorithms and software running in cloud to allow all possible stakeholders to connect to laboratory facilities to enable teaching and learning factory paradigms also for remote use;
- Integrate virtual and augmented reality tools into laboratory facilities for teaching and training purposes;
- Identify skills that can be developed through the combination of new digital technologies and teaching factories approach;
- Introduce serious game approaches, to formulate problems and run a problem solving approach that makes learner and/or trainee feeling to be immersed in a real industrial problem setting.

HOW TO APPLY

Candidates can apply exclusively through the **online application system** at the following link:

www.phd-admission.polimi.it

The deadline for application is 14:00 (CEST time), 20th May 2021. No application is accepted after the deadline

The Selection Committee will assess candidates basing on their CV and their research projects. The Committee will interview short-listed candidates (preferably on Skype).

The admission-ranking will be published on **22th July 2021** at the following link:

[Dottorati di Ricerca - Politecnico di Milano: Rankings and replacements \(polimi.it\)](#)

The selected candidate will enrol in the two PhD programmes at both universities.