

Organized by the Universidad de Zaragoza, in collaboration with the Università degli Studi del Piemonte Orientale "Amedeo Avogadro", Universitatea Tehnică "Gheorghe Asachi" din Iași, and Université Sorbonne Paris Nord

#### **WHY**

# WHEN & WHERE

- Earn 4 ECTS
- International and interdisciplinary learning experience
- Rich virtual environment for on-line classes and activities
- A hands-on experience using open source software
- · Collaborative project working in teams
- · Team building activities
- Enjoy the lively atmosphere of Zaragoza, a city with a rich history and heritage

On-line part: mid-March to mid-June 2026

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#### Residential part:

29/6 - 3/7/2026 in Zaragoza, Spain. Courses and accommodation are in the city center



















## WHAT WILL YOU LEARN?

The course provides motivation for performing simulation studies, illustrates the main concepts and methods for building the models, executing them and analysing the output. This is done through hands-on exercises using open source simulation environments. The basic background notions on probability and statistics needed to perform the analysis of the simulation output are reviewed in the course.

### At the end of the course you will be able to:

- Define the purpose of a simulation and provide examples of possible applications.
- Conceive a simulation model chosen from an application domain of your interest and suitable for being executed by a discrete event simulator.
- Build a model using a modeling and simulation tool and execute it: this includes choosing the correct abstraction level, properly defining the model parameters (possibly from measured input data) and the performance indicators of interest.
- Observe the random nature of some input parameters and the consequences on the output measures; realize the need to perform multiple executions of the simulation and to apply statistical analysis to the output data obtained.
- Apply all the above abilities to a realistic case study. Perform what-if analysis to
  observe and explain how the simulation results change when considering
  variations of the model (different configurations or parameter values).

In the final project work, started on-line and fully developed during the residential part of the course, you will be challenged to find an efficient configuration for an application case study of your interest collaborating with your team, and have the opportunity to discuss and compare your solution with that of other teams.









