

Course on

Reactor Transients, Nuclear Safety and Uncertainty and Sensitivity Analysis

This course aims at giving the participants a full and comprehensive overview of:

- The principles of nuclear reactor safety and system behaviour from the point of view of nuclear safety.
- The principles of uncertainty and sensitivity analysis applied to nuclear reactor simulations and their importance in the evaluation of the simulations' results.

The **pedagogical format** of the course is based on a **hybrid flipped classroom**. In this format, you need to complete some **preparatory work** (representing about 40 hours of work) before attending **interactive classes** organized during 5 consecutive days (representing about 40 hours of work). Those classes are given in a hybrid set-up, with participants following the classes either onsite or remotely on the web. Research in engineering education demonstrated that such a teaching format leads to better learning outcomes and increases the interactions between the students and the teachers.

After the course you will be able to:

- Understand the fundamentals of nuclear reactor safety evaluations and the role of regulations.
- Carry out simulations of relevant safety scenarios with state-of-the-art system analysis codes.
- Understand the basis of uncertainty propagation and sensitivity determination in the results of safety simulations.
- Carry out uncertainty and sensitivity calculations using system analysis codes.

In order to **pass the course** and be issued a **course completion certificate**, you need to obtain at least 50 points (out of 100 max. points). All activities (both during the preparatory work and the interactive classes) are graded.

The course is given by:

- Prof. Rafael Macián-Juan, Technical University of Munich, Munich, Germany.
- Assoc. Prof. Paolo Vinai, Chalmers University of Technology, Gothenburg, Sweden.

The interactive sessions are organized between February 19 and 23, 2024 at Universitat Politècnica de València, Valencia, Spain and on the web.

Register before December 10, 2023, 23:59 at:

great-pioneer.eu/register