MSc in Water and Sustainable Development

MODULE

Modelling, programming and computational hydraulics

The nature of hazards and risk require employing various modelling approaches, depending on the scale and goal of modelling. Understanding the fundamentals of modelling theory, applicability of various types of models, and ability to apply them, and interpret results, is fundamental for a water engineer and manager. The module introduces programming concepts in Python, in order to solve computational hydraulics applications. Modelling theory from hydroinformatics perspective is introduce as a follow up of programming, focussing on how water processes are modelled at various scales and level of detail, calibrated and validated, as well as addressing their uncertainties. Special emphasis in the module is given to the models of computational hydraulics (introducing the widely used numerical schemes), as the basis of most modelling systems used in real water management practice.