Modélisation et simulation

Lecturer
Gianluca BONTEMPI (Coordinator)

Course mnemonic
INFO-F305

ECTS credits
5 credits

Language(s) of instruction
French

Course period
First term

Campus
Plaine

Course content
1) Introduction to modelling and simulation 2) introduction to dynamical systems 3) Discrete-state and discrete-time systems 4) continuous time dynamical systems 5) continuous linear systems 6) nonlinear continuous systems 7) discrete-time systems 8) Monte Carlo simulation 9) discrete-event simulation

Objectives (and/or specific learning outcomes)
Introduction to the notions of modelling and simulation of dynamical systems and their application to real problems. Introduction to the tools (Simulink) and languages for computer simulation.

Pre-requisites and co-requisites
Pre-requisites courses
INFO-F205 | Calcul formel et numérique | 5 crédits

Co-requisites courses
INFO-F205 | Calcul formel et numérique | 5 crédits

Teaching method and learning activities
Lectures, exercises and practical assignments. Some assignments involve practical work using the software package Octave.

References, bibliography and recommended reading

Course notes
Syllabus and Université virtuelle

Other information
Place(s) of teaching
Plaine

Contact(s)
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Evaluation method(s)
written examination and Project

Evaluation method(s) (additional information)
Modelling computer project (with Octave) + written exam

Determination of the mark (including the weighting of partial marks)
18/20 (written assessment), 2/20 (project)

Main language(s) of evaluation
French

Programmes
Programmes proposing this course at the faculty of Sciences
BA-INFO | Bachelor in Computer science | unit 3, BA-MATH | Bachelor in Mathematics | unit 3 and MA-ACTU | Master in Actuarial Science | finalité Professional/unit 1