

Systems analysis complex



ECTS
4 credits



Component
INSTITUT
NATIONAL
DES SCIENCES
APPLIQUEES
TOULOUSE



Number of
hours
50h

Presentation

Description

This UF is composed of two distinct and autonomous parts:

- * Multivariable systems
- * Nonlinear systems analysis

Organisation:

Semestre 1

This two courses proceed in parallel without any particular interaction. Some exercises are performed on computer using Matlab.

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

- * Principles, difficulties and limits of the modeling of systems with multiple inputs and multiple outputs.
- * Design and implementation of control of systems with multiple inputs and multiple outputs.

- * Main possible and observable behaviors which can occur in the nonlinear systems (equilibrium states, limit cycles, complex behaviors) and their evolution by variation of the parameters.
- * Basis of the theory of Lyapunov

The student will be able to:

- * To apprehend the implementation of the control of a process with multiple inputs and multiple outputs.
- * To begin the analysis of a nonlinear system by various techniques (qualitative, geometrical, and simulations)
- * To lean on numerical analysis (Matlab©) to establish, confirm, validate, simulate and implement the theoretical results discussed during the courses.

Useful info

Place

➤ Toulouse