

Process control

Introducing

Description

- Overall total or partial mass balance, enthalpy balance in transient and steady state
- Concept of system, input and output variables, disturbance
- Some mathematical aspects: linearization of a function with several variables, Laplace Transformation
- Transfer function
- Block diagram
- ↳ 1st order, 2nd order and pure delay linear systems
- Open loop and closed loop
- Derivative Proportional Integral Regulation
- Concept of stability of a system
- Setting the parameters of a regulator
- Applications: chemical and biological reactors

Objectives

Acquire the main concepts of process control and apply them to simple cases of process engineering and biochemical engineering.

Necessary prerequisites

I2BEBT10 Global mass and energy balances on geometric domains
I2BEMT11 Laplace transform, Taylor expansion, Decomposition into simple elements

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

📍 Toulouse