ESIROI
ÉCOLE D'INGÉNIEURS
UNIVERSITÉ DE LA RÉUNION

DEPARTMENT : *CPI*
SEMESTER : *S4*

IDENTIFICATION

Course code : E2CP4B4
ECTS : 2.5

DURATION

Lectures :	10
Tutorial classes :	10
Labs :	12
Total :	32

Project :
Personnal work :

ASSESSMENT

2 Written exams (2h/2h) + 1 Lab report

TEACHING MATERIALS

LANGUAGE

English

CONTACT

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UE : BATIMENT-ENERGIE

COURSE : Control and Command

SCOPE OF THE COURSE

OBJECTIVES

To enable students : - to acquire concepts of control and command of physical systems. - to distinguish between open-loop and closed-loop control. - to calculate the parameters of a PID controller based on user specifications. - to analyze the performance of the regulated system (Stability, accuracy, and speed).

COMPETENCE AND SKILLS

— To know the vocabulary associated with control and command.
— To be able to control a microcontroller.
— To be able to regulate and servo-control a process (temperature control, solar tracker, heating control, etc.) using a P / PI / PID controller.

PROGRAM

1. Open-loop and closed-loop control.
2. Study of 1st and 2nd order systems.
3. Closed-loop transfer function.
4. Performance analysis of the servo-controlled system.
5. PID correction of systems and disturbance rejection.

BIBLIOGRAPHY

REQUIREMENTS

Mathematics and computer science, programming, algorithms, general physics/chemistry, electrical engineering