Digital control system

In brief

Course langage: French

Presentation

Prerequisites

Automation of continuous linear systems

Learning objectives

In addition to the electronics and linear automation courses, this course deals with the study of systems and their digital control. Students will be able to participate in the elaboration of specifications and the design of control systems aiming at controlling processes (mechanical, electronic, chemical, ..) by implementing an algorithm in a computer.

Description of the programme

Presentation of the methods of synthesis of numerical control laws ensuring the dynamic and static behavior of a system in accordance with the constraints described in a specification.
Polynomial methods: methodologies and implementation on a computer.

The 3 parts developed are the following:

- General concepts and mathematical tools
- Methods for studying stability and precision
- Methods for the synthesis of digital controllers.

The theoretical concepts will be illustrated in TL by the implementation and simulation of multi-physics systems and their associated control.

Generic central skills and knowledge targeted in the discipline

Contribution to the ;
- Mastering the complexity of systems.
- Development of technical and scientific innovations.
- Solving complex problems.
- Solving trans-disciplinary problems requiring the introduction of a process control

How knowledge is tested

-TP
-Continuous assessment
-Oral and report

Bibliography

Course documents
Analyse et Régulation des processus industriels tome 2 P Borne Commande numérique de systèmes Dynamiques Roland Longchamp

Teaching team

Alain Kilidjian

Guillaume Gaton

Sustainable Development Goal



Quality education



Gender equality



Affordable and clean energy



Responsible consumption and production

Total des heures **30h**

CM	Master class	12h
TD	Directed work	6h
TP	Practical work	12h

Useful info

Name responsible for EU

Lead Instructor
Alain Kilidjian
alain.kilidjian@centrale-marseille.fr