Teaching activities and project contribution

MISCE project

Mechatronics for Improving and Standardizing Competences in Engineering

Competence: Control Engineering

Workgroup: Universidad de Castilla-La Mancha

Universitat Politècnica de València

This document describes the teaching activities developed during MISCE project related to the competence ‘Control Engineering’.

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Visit https://misceproject.eu/ for more information.

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1 Teaching activities

The teaching activities undertaken are described below:

- Activity A: Using DC-motor control platform for identify the system dynamics and develop the velocity and position control in ‘s-laplace’ domain (continuous controllers).
- Activity B: Using DC-motor control platform for identify the system dynamics and develop the velocity and position control in ‘z-transform’ domain (discrete controllers).
- Activity C: Using DC-motor control platform for experimentally tuning continuous controllers.

2 Summary of teaching interventions

Table I summarizes the teaching interventions undertaken using the DC motor control platform for contributing to Control Engineering competences.

Table I. Summary of teaching activities

University	Degree	Subject	Course	Semester	Activity/Interventions	Number of students	Number of professors
University of Castilla-La Mancha (Toledo, Spain)	Electrical Engineering	Digital Control	23/24	2	B/4	30	2
University of Castilla-La Mancha (Toledo, Spain)	Industrial Electronics and Automation Engineering	Digital Control	23/24	2	B/4		3
University of Castilla-La Mancha (Toledo, Spain)	Electrical Engineering	Automatic Control	24/25	1	A/4	25	2
University of Castilla-La Mancha (Toledo, Spain)	Industrial Electronics and Automation Engineering	Automatic Control	24/25	1	A/4		3
University of Castilla-La Mancha (Toledo, Spain)	Electrical Engineering	Digital Control	24/25	2	B/4	27	2
University of Castilla-La Mancha (Valencia, Spain)	Industrial Electronics and Automation Engineering	Digital Control	24/25	2	B/4		3
Universitat Politècnica de Valéncia (Valencia, Spain)	External Practice	External Practice	24/25	2	C/1	3	1
University Rey Juan Carlos (Madrid, Spain)	Industrial Electronics and Automation Engineering	Automatic Control	24/25	2	A/4	4	1

3 Contribution to the project KPIs

Table II summarises the contribution of 'control engineering' case of study to the project KPI.

Table II. Summary of the contribution to the project KPI

KPI	No.
Number of devices	1
Number of competencies covered for these devices	1
Functionality of the digital repository	1
Number of degrees	2
Number of subjects	2
Number of teaching interventions over the students	29
Number of competences covered in these experiences	1
Number of students involved	89
Number of HEIs teacher involved	2
Number of Professionals involved	3