Teaching activities and project contribution

MISCE project

Mechatronics for Improving and Standardizing Competences in Engineering

Competence: Computer Programming

Workgroup: Universidad de Castilla-La Mancha

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

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1 Teaching activities

The teaching activities undertaken are described below:

- Activity A: Executing programming exercises related to engineering skills for promoting computational thinking.
  - Activity A1: Preliminary exercises: Matrix/vector manipulation problems
  - Activity A2: Basic Matrix Manipulation Problems
  - Activity A3: Input Argument and Error Checking Problems
  - Activity A4: Vector and Matrix Algorithm Problems
  - Activity A5: Random Number Algorithm Problems
  - Activity A6: String Manipulation Problems
  - Activity A7: File Handling Algorithm Problems
  - Activity A8: Advanced Vector and Matrix Algorithm Problems

2 Summary of teaching interventions

Table I summarizes the teaching interventions undertaken using the programming exercises for contributing to the Computer Programming competence.

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)	Aerospace Engineering (2º course)	Computer science	24/25	1	A/12	62	1
University of Castilla-La Mancha (Toledo, Spain)	Electrical Engineering (1º course)	Computer science	24/25	1	A/12	83	3
University of Castilla-La Mancha (Toledo, Spain)	Industrial Electronics and Automation Engineering (1º course)	Computer science	24/25	1	A/12	94	2

3 Contribution to the project KPIs

Table II summarises the contribution of ‘computer programming’ case of study to the project KPI.

Table II. Summary of the contribution to the project KPI

KPI	No.
Number of devices/virtual platform	1
Number of competencies covered for these devices	1
Functionality of the digital repository	1
Number of degrees	3
Number of subjects	2
Number of teaching interventions over the students	36
Number of competences covered in these experiences	1
Number of students involved	239
Number of HEIs teacher involved	3
Number of Professionals involved	1