2a. System design and integration/interfacing between electronic and mechanical components

Functional Area: R&D / IT

Assessment criteria	Assessment criteria
LO2a.1: Identifies the elements of the regulation loop of industrial systems, relating their role to the elements making up • automation processes. Describe the main characteristics of a mechatronics assy and its potential use applications • Based on a real example of an implementation of a process/realization of a product, propose improvements to its design, underlining its pros/cons • Demonstrate function of different sensors [e.g. proximity, inductive, capacitive, magnetic, photoelectric, temperature, haptic, etc.] LO2a.2. Integrates mechatronic systems. • Perform project work on Mechatronics (e.g. involving fitting, drilling, turning, milling, grinding, electrical wiring & soldering, programming, hydraulic circuit assembly, pneumatic circuit assembly, drives, system assembly and interfacing, functional testing, troubleshooting and repair. Safety measures in each stage	LO2a.1: Identifies the elements of the regulation loop of industrial systems, relating their role to the elements making up • automation processes. Describe the main characteristics of a mechatronics assy and its potential use applications • Based on a real example of an implementation of a process/realization of a product, propose improvements to its design, underlining its pros/cons • Demonstrate function of different sensors [e.g. proximity, inductive, capacitive, magnetic, photoelectric, temperature, haptic, etc.] LO2a.2. Integrates mechatronic systems. • Perform project work on Mechatronics (e.g. involving fitting, drilling, turning, milling, grinding, electrical wiring & soldering, programming, hydraulic circuit assembly, pneumatic circuit assembly, drives, system assembly and interfacing, functional testing, troubleshooting and repair. Safety measures in each stage
	Skills
	• Capability to properly read and understand technical specifications and material description • Identify type of materials and components for machining/assembling or storing in appropriate environment • Identify and propose adequate types of material for product/process • Identify appropriate machining procedures • Identify relevant parameters (eg temperature, humidity, RPM, clean room level...) • Machine/construct components on the basis of relevant specification

	Transferable skills
	• Capability to communicate in English in a interdisciplinary / international team, in virtual and real modality • Understand descriptions, specifications, technical data and other info typical of the profession in English and prepare them for next phase of project/Customer in understandable manner • Be capable to interface/report with the R&D/Engineering/Maintenance departments in a logical and coherent manner