[GJZ004] PRODUCTION EQUIPMENT AND AUTOMATED SYSTEMS ENGINEERING III

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING			**Subject**	MECHATRONIC DESIGN
Semester	1	**Course**	4	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2017	**Modality**	Face-to-face	**Language**	?
Credits	12	**Hours/week**	16.67	**Total hours**	300 class hours + 0 non-class hours = **300 total hours**

PROFESSORS

ORUNA OTALORA, ANGEL
ERAÑA LARRAÑAGA, IÑIGO

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	*(No previous knowledge required)*

SKILLS

VERIFICA SKILLS

SPECIFIC

GJCE20 - Analysing, considering and assessing mechatronic problems in equipment or production processes and automated systems, proposing the most suitable alternatives, assuming responsibilities, taking part in different work teams and generating the appropriate technical documentation, arguing and justifying any conclusions and solutions presented and transmitting information, ideas, problems and solutions to a specialised and non-specialised public

GENERAL

GJCG01 - To be able to take the initiative in problem solving, decision making, creativity, critical thinking, effective communication and the transfer of knowledge and skills in the field of mechatronics engineering

GJCG02 - To be able to do their job in multilingual, multidisciplinary environments.

GJCG03 - Addressing and optimising activities of assembly, commissioning, assistance and maintenance of facilities, machinery, and industrial mechatronic systems

GJCG04 - Managing technically teams and people in activities of assembly, commissioning, assistance and maintenance of facilities, machinery and industrial systems, through the methodology of administration by projects for the effective execution of planning

GJCG06 - Implement and materialize projects of automation and control of equipment, processes and flexible industrial systems, through the integration of hardware and software in order to optimize the operation of the different units that make up the system to meet the needs of the productive sector

CROSS

GJCTR1 - To be able to do their job in cooperative, participatory environments, with awareness of social responsibility.

BASIC

G_CB1 - To have proven to understand and have knowledge in a field of study based on general secondary education at a level found in advanced textbooks and including concepts at the forefront of their field of study.

G_CB2 - To be able to apply knowledge to occupational or professional tasks; have the necessary skills to pose and defend arguments, and to solve problems within their field of study

G_CB4 - To be able to communicate information, ideas, problems and solutions to both expert and lay audiences

G_CB5 - To have developed learning abilities required to embark on subsequent studies with a high level of autonomy.

LEARNING RESULTS

RGJ413 They evaluate situations and propose and apply methods, techniques, regulations, tools, etc., specific to the profession of Mechatronic Engineer in an unknown industrial context.

LEARNING ACTIVITIES	*CH*	*NCH*	*TH*
Practices in real environments	180 h.		180 h.

EVALUATION SYSTEM	*W*
Observation of student participation and attitude in the proposed training activities	100%

Comments: Technical and learning capacity demonstrated by the student in the practices developed in the company.

MAKE-UP MECHANISMS

Observation of student participation and attitude in the proposed training activities

Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 180 h.
NCH - Non-class hours: 0 h.
TH - Total hours: 180 h.

RGJ414 They assume responsibilities in the team, organizing and planning the tasks to be developed, dealing with contingencies and encouraging the participation of its members.

LEARNING ACTIVITIES	CH	NCH	TH
Practices in real environments	30 h.		30 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Observation of student participation and attitude in the proposed training activities	100%	Observation of student participation and attitude in the proposed training activities **Comments:** Continuous assessment. Retake is not foreseen.

CH - Class hours: 30 h.
NCH - Non-class hours: 0 h.
TH - Total hours: 30 h.

RGJ415 They analyze the variables involved in the problem and propose actions for a stable situation.

LEARNING ACTIVITIES	CH	NCH	TH
Practices in real environments	30 h.		30 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Observation of student participation and attitude in the proposed training activities	100%	Observation of student participation and attitude in the proposed training activities **Comments:** Continuous assessment. Retake is not foreseen.

CH - Class hours: 30 h.
NCH - Non-class hours: 0 h.
TH - Total hours: 30 h.

RGJ416 They define the problem, the development of the solution, as well as the conclusions in an effective way, arguing and justifying each of them, making a correct use of the language, in writing.

LEARNING ACTIVITIES	CH	NCH	TH
Practices in real environments	30 h.		30 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices	100%	Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices **Comments:** Continuous assessment. Retake is not foreseen.

CH - Class hours: 30 h.
NCH - Non-class hours: 0 h.
TH - Total hours: 30 h.

RGJ417 They define the problem, the development of the solution, as well as the conclusions in an effective way, arguing and justifying each one of them, and making a correct use of the language, orally.

LEARNING ACTIVITIES	CH	NCH	TH
Practices in real environments	30 h.		30 h.

EVALUATION SYSTEM	*W*	MAKE-UP MECHANISMS
Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices	100%	Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices **Comments:** Continuous assessment. Retake is not foreseen.

CH - Class hours: 30 h.
NCH - Non-class hours: 0 h.
TH - Total hours: 30 h.

CONTENTS

- Techniques for assembling production equipment: mechanical elements (transmission elements, guiding elements, sealing elements, etc.) in new contexts.
- Advanced manufacturing process systems: forming processes, machining processes, machining, welding
- Automation applications and programming of line parameters, equipment or manufacturing processes.
- Advanced programming of automated systems
- Advanced tuning of equipment and production processes
- Measurement, testing and verification of components / subsets / mechanical sets or parameters on production processes in autonomy: tools, techniques and elements of measurement / monitoring / testing.
- Diagnosis of malfunctions of the productive equipments of mechanisms and complex systems.
- Diagnosis, verification and troubleshooting of complex automated systems
- Advanced project management and working methods of company departments
- Occupational health and safety, and environmental protection

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Topic related web quires	*(No bibliography)*
Technical articles	
Moodle Platform	
Material and training resources in the company for the development of the internship	
Workplace in the company for the development of the internship	
Support from company and the academic tutors of the internship	