Goi Eskola Politeknikoa | Mondragon Unibertsitatea
Course: 2023 / 2024 - Course planning

[GAH201] AUTOMATION

GENERAL INFORMATION

Studies	DEGREE IN ENERGY ENGINEERING	**Subject**	INSTRUMENTATION, AUTOMATION AND CONTROL
Semester	1	**Course** 2	**Mention / Field of specialisation**
Character	COMPULSORY		
Plan	2022	**Modality** Face-to-face	**Language** CASTELLANO/EUSKARA
Credits	4,5	**Hours/week** 2.67	**Total hours** 48 class hours + 64.5 non-class hours = **112.5 total hours**

PROFESSORS

ZALDIBIA GARATE, JOSEBA EDORTA

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GAR206 - Develops automation systems according to the requirements and needs of industrial applications		x		4,02
G-RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, - becoming aware of respect for human rights and fundamental rights, and analyzing and assessing the impact of the proposed solutions on the SDGs - to acquire and/or apply basic, advanced and /or avant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies with a high degree of autonomy		x		0,24
G-RTR2 - To express information, ideas and the arguments that support them in an orderly, clear and coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language		x		0,24
			Total:	4,5

KC: Knowledge or Content / SK: Skills / AB: Abilities

CONTENTS

Topic 1-Programmable Logic Controllers
1.1-Basic PLC concepts1.2-TIA Portal - Programming Environment Management 1.3-Basic Concepts-Programming KOP Language1.4-Numerical and Analogue Processing.1.5-Parameterisable Functions1.6-Data Modules and definition of new types of data (UDT).**Theme 2.-HMI Screens**
2.1-Configuration and basic parameterisation HMI.2.2-Templates definition.2.3-Definition and development of screens with basic graphic interfaces. 2.4-Real time graphics (Trends).2.5-Generation of historical data.**Practical 1**
Automation of an energy management of a house, to be able to install an electric car charger, without increasing the contracted power.**Practical 2**
Development of HMI interfaces in the energy management of a house, to be able to install an electric car charger, without increasing the contracted power.

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	**Bibliography**
Subject notes	http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_lnk.pl?grupo=ENERGIA21&ejecuta=15
Labs	
Moodle Platform	
Class presentations	
Computer practical training	
Slides of the subject	
Student book	