

103] HUMAN-MACHINE INTERFACES AND DATA SUPERVISION, CONTROL AND ACQUISITION

GENERAL INFORMATION

Studies	Master's Degree in ROBOTICS AND CONTROL SYSTEMS	Subject	?
Semester	2	Course	1
Character	OPTIONAL	Mention / Field of specialisation	AUTOMATION
Plan	2023	Modality	Face-to-face
Credits	3	Hours/week	0
		Language	CASTELLANO/EUSKARA
		Total hours	28 class hours + 47 non-class hours = 75 total hours

PROFESSORS

ELKOROBARRUTIA LETONA, XABIER
 ZALDIBIA GARATE, JOSEBA EDORTA

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
BASIC INDUSTRIAL AUTOMATION	(No previous knowledge required)
BASIC PROGRAMMING	

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
M1R204 - [!] <i>Optimizar la visualización de la información e historizarlo utilizando las tecnologías adecuadas que cumplan con los requerimientos especificados</i>			x	2,4
M1R223 - [!] <i>Capacidad de trabajar en equipos multidisciplinares y en un entorno multilingüe y de comunicar, tanto de forma oral como escrita, conocimientos, procedimientos, resultados e ideas relacionadas con los temas afines al máster</i>		x		0,2
M1R227 - [!] <i>Demostrar capacidad para integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre los ODS, los derechos humanos y derechos fundamentales, y sobre la</i>		x		0,4
Total:				3

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

SECONDARY LEARNING RESULTS

RA051 [!] *Diseña, desarrolla y valida interfaces persona/máquina avanzados con entradas de datos, gestión de alarmas e históricos de datos sintetizando los factores que intervienen para realizar juicios éticos*

LEARNING ACTIVITIES

	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	8 h.	8 h.	16 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.	8 h.	12 h.
Practical work in workshops and/or laboratories, individually and/or in teams	4 h.	8 h.	12 h.

EVALUATION SYSTEM

	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	65%
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	35%

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

Comments: All activities (control points, individual and group work, etc.) must have a minimum grade of 5 and an opportunity for recovery (except the PBL). In unapproved training activities (less than 5) the recovery is compulsory and the final grade will be the grade obtained in the recovery. In the activities carried out it is necessary to obtain a minimum mark of 4 to calculate the average mark of the learning result. Otherwise, the note of the learning result will be that of the suspended activity. The system will calculate the final grade with the RA, applying the percentages defined in IKOF.

CH - Class hours: 16 h.
NCH - Non-class hours: 24 h.
TH - Total hours: 40 h.

RA052 [!] *Diseña, desarrolla y valida aplicaciones de Supervisión, Control y Adquisición de Datos que integran interfaces hombre/máquina avanzados, bases de datos y herramientas de generación de informes trabajando individualmente y en equipos multidisciplinar*

LEARNING ACTIVITIES

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	6 h.	10 h.	16 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	6 h.	13 h.	19 h.

EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	80%
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	20%

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

Comments: All activities (control points, individual and group work, etc.) must have a minimum grade of 5 and an opportunity for recovery (except the PBL). In unapproved training activities (less than 5) the recovery is compulsory and the final grade will be the grade obtained in the recovery. In the activities carried out it is necessary to obtain a minimum mark of 4 to calculate the average mark of the learning result. Otherwise, the note of the learning result will be that of the suspended activity. The system will calculate the final grade with the RA, applying the percentages defined in IKOF.

CH - Class hours: 12 h.
NCH - Non-class hours: 23 h.
TH - Total hours: 35 h.

CONTENTS

1.-HMI Unified MTP 700 Comfor

t1.1-Configuration, parameterisation of MTP 700 Comfort1.2-Generation of templates with image window technology1.3-Basic functions. Generation of images, controls or graphical objects.1.4-Advanced functions: user administration, alarm management, data history, reports, recipes, scripts and language changes.1.5-Fac eplate, prodiag and energy suite.

2.-Development of HMI interfaces in Python language and QT graphical objects libraries (GUI).

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Moodle Platform
 Lab practical training
 Computer practical training
 Specific Master Software
 Class presentations

Bibliography

(No bibliography)