		Teaching	Guide		
	ldentifying I	Data			2018/19
Subject (*)	Home Automation Systems (Domotics)		Code	770G02038	
Study programme	Grao en Enxeñaría Eléctrica				
		Descript	ors		
Cycle	Period	Year		Туре	Credits
Graduate	2nd four-month period	Fourtl	า	Optional	6
Language	Spanish		1		-
Teaching method	Face-to-face				
Prerequisites					
Department	Enxeñaría Industrial				
Coordinador	Casteleiro Roca, José Luis E-mail jose.luis.casteleiro@udc.es				
Lecturers	Casteleiro Roca, José Luis E-mail jose.luis.casteleiro@udc.es				
Web		'			
General description	The subject's main objective is to give	e students the	oretical knowledg	ge of various types o	f the Home Automation System
	and its operation ways, in order to a	chieve the nec	essary knowledge	e for their manage, a	nalysis and design.

	Study measurement commetences / requite
	Study programme competences / results
Code	Study programme competences / results
A1	Capacidade para a redacción, firma, desenvolvemento e dirección de proxectos no ámbito da enxeñaría industrial, e en concreto da
	especialidade de electricidade.
A2	Capacidade para planificar, presupostar, organizar, dirixir e controlar tarefas, persoas e recursos.
А3	Capacidade para realizar medicións, cálculos, valoracións, taxacións, peritaxes, estudos e informes.
A4	Capacidade de xestión da información, manexo e aplicación das especificacións técnicas e da lexislación necesarias no exercicio da
	profesión.
A5	Capacidade para analizar e valorar o impacto social e medioambiental das solucións técnicas actuando con ética, responsabilidade
	profesional e compromiso social, e buscando sempre a calidade e mellora continua.
C1	Expresarse correctamente, tanto de forma oral coma escrita, nas linguas oficiais da comunidade autónoma.
C3	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e
	para a aprendizaxe ao longo da súa vida.
C7	Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.

Learning outcomes		
Learning outcomes	Study pr	ogramme
	compe	tences /
	res	sults
Design and calculate technical facilities management and integration of the various services and facilities that exist in buildings	A2	C1
	A4	
Knowing the different facilities that can present homes and buildings; its main features and its architecture	А3	СЗ
	A5	C7
Knowing the pillars of the technical management of facilities in residential buildings (Home Automation) and buildings (Building	A1	C1
Automation)	A4	
Conocer los principios de las normas, reglamentos y legislación y autorizaciones administrativas de instalaciones a nivel	A1	C7
nacional, regional y municipal	А3	
Knowing the selection and resize efficiently the appropriate energy systems, communications, comfort, security and energy	A2	СЗ
management	A5	
Conocer las soluciones técnicas que ofrece el mercado en el área de la gestión de instalaciones técnicas	А3	C3
		C7
Ser capaz de interpretar la información técnica y otras fuentes de información, en español y en Inglés	А3	C1

	Contents
Topic	Sub-topic
Topic 1: Introduction to Home Automation	1.1. General characteristics
	1.2. Features and applications of the Home Automation in housing
	1.3. Components of a Home Automation system
Topic 2: Applications and types of automation systems	2.1. Services and Home Automation applications at homes
	2.2. Classification of Home Automation systems
	2.3. Wireless systems
Topic 3: Power Line Carrier systems	3.1. The X-10 standard
	3.2. Main components
	3.3. Installation and configuration
	3.4. Other possibilities
Topic 4: Systems with Programmable Logic Controller	4.1. Characteristics of systems with Programmable Logic Controller
	4.2. SIMON system
	4.3. Basic components
	4.4. Installation and configuration
	4.5. Other systems with programmable controller
Topic 5: Data Bus systems	5.1. KNX standard features
	5.2. Basic components
	5.3. Installation and configuration
	5.4. Programming with ETS
Topic 6: Installations	6.1. Electrical installations
	6.2. Telecommunication installations
	6.3. Plumbing installations
	6.4. Air conditioning installations
	6.5. LPG installations

Topic 7: Installations basic legislation	7.1. The planning act in construction law
	7.2. The technical building code
	7.3. Electrical low voltage regulation
	7.4. Thermal installations regulation
	7.5. Common telecommunications infrastructure regulation
Topic 8: Energy management and certification	8.1. Legislation
	8.2. Home Automation involvement in the energy rating
	8.3. Residential buildings certification
	8.4. Tertiary sector buildings certification

	Plannii	ng		
Methodologies / tests	Competencies /	Teaching hours	Student?s personal	Total hours
	Results	(in-person & virtual)	work hours	
Guest lecture / keynote speech	A4 A5 C7	17	31	48
Problem solving	A3 A4 C1 C3	15	22	37
Laboratory practice	A1 A2 A3 C1	8	24	32
Workshop	A1 A4 C3 C1	8	10	18
Mixed objective/subjective test	A3 A4 C7	2	10	12
Personalized attention		3	0	3

	Methodologies
Methodologies	Description
Guest lecture /	Keynote speech complemented with the use of audiovisual media and the introduction of some questions to students, in order
keynote speech	to transmit knowledge and facilitate learning.
	The order of the topics covered will not have to be the one described in the teaching guide. In addition, there will be topics that
	can be seen together on the development of others, and the division between them may not be strict.
Problem solving	Solving exercises and specific problems in the classroom, from the knowledge explained.
Laboratory practice	Performing laboratory practice as far as possible; or, failing that, solving exercises and specific problems in the classroom,
	from the knowledge explained. In addition, within the laboratory practice can include a small work of specific subjects of the
	subject to ensure the correct understanding of the subject.
Workshop	Realization of an individual work of a specific subject of the subject and sharing in a group to share knowledge. Later the
	works will be joined in a common one that will be presented in class by groups.
Mixed	It consists in carrying out an objective test of approximately 1 hour, in which the acquired knowledge will be evaluated.
objective/subjective	
test	

	Personalized attention		
Methodologies	Methodologies Description		
Laboratory practice	Laboratory practice The student has the relevant meetings of personalized tutorials, to resolve the concerns arising from the matter.		

Assessment

Methodologies	Competencies /	Description	Qualification
	Results		
Mixed	A3 A4 C7	Exam type objective test	60
objective/subjective			
test			
Laboratory practice	A1 A2 A3 C1	Some tasks established in the subject, within the framework of this methodology	15
Workshop	A1 A4 C3 C1	Realization of an individual work of a specific subject of the subject and sharing in a group to share knowledge. Later the works will be joined in a common one that will be presented in class by groups.	25
Others			

Assessment comments

As part of the "Laboratory practice" may include aspects such as attendance, personal work, proposed personal work, attitude, etc., to help to pass the subject.

The "Mixed test" will be divided into a theoretical and practical part.

It is necessary to exceed 50% of the score in the theoretical part of the "Mixed test" to approve, as well as having made and approved the work proposed in the "Laboratory practice".

	Sources of information
Basic	- Moreno Gil, José (2000). Instalaciones automatizadas en viviendas y edificios. Madrid: Paraninfo
	- Huidobro, José Manuel (2008). Domótica : edificios inteligentes. Segovia: Copyright
	- Junestrand, Stefan (2004). Domótica y hogar digital. Madrid : International Thomson Editores
- Romero Morales, Cristóbal (2010). Domótica e inmótica: viviendas y edificios inteligentes. Madrid: Ra-Ma	
	- Huidobro, José Manuel (2010). Manual de domótica. Madrid: Creaciones Copyright
	- Tobajas García, Carlos (2011). Instalaciones domóticas. Barcelona: Cano Pina: CEYSA

Recommendations

Subjects that it is recommended to have taken before

Electric Installations low voltage/770G02022

Automation/770G02028

Power Electronics/770G02029

Technical Office/770G02034

Industrial installations and comercial/770G02031

Subjects that are recommended to be taken simultaneously

Subjects that continue the syllabus

Efficient management of electric power/770G02040

Industrial Instrumentation/770G02042

Other comments

To help achieve an immediate sustainable environment and meet the objective of action number 5: "Healthy and sustainable environmental and social teaching and research" of the "Green Campus Ferrol Action Plan":1. The delivery of the documentary works that are made in this matter: 1.1. They will be requested in virtual format and / or computer support 1.2. They will be made through Moodle, in digital format without the need to print them

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.