



IDENTIFYING DATA

(*)Instalacións de Abastecemento e Saneamento

Subject	(*)Instalacións de Abastecemento e Saneamento			
Code	V04M161V01207			
Study programme	(*)Máster Universitario en Xestión e Tecnoloxía de Estruturas e Instalacións			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Optional	1st	2nd
Teaching language	Spanish			
Department				
Coordinator	Martín Ortega, Elena Beatriz			
Lecturers	Bendaña Jácome, Ricardo Javier Martín Ortega, Elena Beatriz Román Espiñeira, Miguel Ángel			
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Web				
General description	The aim of this matter consists in the training of qualified specialists in practical methods of design, calculation and *dimensionado of hydraulic networks in *edificación, treatment of drinkable waters and *depuración of residual waters.			

Competencias

Code				
A2	(*)Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.			
A3	(*)Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.			
A5	(*)Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.			
B1	Capacidad para la redacción, dirección y desarrollo de proyectos en el ámbito de la construcción			
B2	Conocimiento en materias tecnológicas, que les capacite para el aprendizaje de nuevos métodos y teorías, y les dote de versatilidad para adaptarse a nuevas situaciones			
B3	Capacidad de resolver problemas con iniciativa, toma de decisiones, creatividad, razonamiento crítico y de comunicar y transmitir conocimientos, habilidades y destrezas			
B4	Conocimientos para la realización de mediciones, cálculos, valoraciones, peritaciones, estudios, informes y otros trabajos análogos			
B5	Capacidad para el manejo de especificaciones, reglamentos y normas de obligado cumplimiento			
C1				
C2				
C6				
D1				
D4				
D6				

Learning outcomes

Expected results from this subject	Training and Learning Results
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Know and comprise the main models of design, calculation and *dimensionado of hydraulic and pneumatic networks in *edificación, treatment of drinkable waters and *depuración of residual waters	A2	B2	C1	D1
	A3	B4	C2	D4
	A5	B5	C6	D6
New	A2	B1	C1	D1
	A3	B2	C2	D6
	A5	B3	C6	
		B4		
		B5		
Develop the capacities of the student regarding criteria and processes of planning, design, project and execution of the systems of supply and *saneamiento previously indicated	A2	B1	C1	D1
	A3	B2	C2	D6
	A5	B3	C6	
		B4		
		B5		

Contents

Topic	
1. PRACTICAL METHODS OF DESIGN, CALCULATION And *DIMENSIONADO OF HYDRAULIC NETWORKS IN *EDIFICACIÓN	Hydraulic theory applied Networks of distribution Pumping in installations
2. INNER INSTALLATIONS OF PLUMBERY	Cold and hot water sanitary Groups of pressure Calculation of installations. Rule
3. SYSTEMS OF EVACUATION	Design and hydraulic calculations of the networks Rules
5. STATIONS *ETAP (Station of Treatment of Drinkable Waters) and *EDAR (Station Debugger of Residual Waters)	*ETAP: Design *EDAR: Design (Types of treatment) -*Pretratamiento -Primary Treatment -Secondary Treatment (Biological System) -Tertiary Treatment (*Ultrafiltración and Ultraviolet Rays).

Planning

	Class hours	Hours outside the classroom	Total hours
Problem solving	3	0	3
Computer practices	3	0	3
Lecturing	12	30	42
Short answer tests	1	0	1
Essay questions exam	0	5	5

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Problem solving	Activity of the autonomous student and *tutorizada
Computer practices	Activity in group of the student and personalised
Lecturing	Lesson *magistral

Personalized attention

Methodologies	Description
Lecturing	They will resolve the doubts that the student pose along the realisation of the exercise
Problem solving	They will resolve the doubts that the student pose along the realisation of the exercise
Computer practices	They will resolve the doubts that the student pose along the realisation of the exercise

Assessment

	Description	Qualification	Training and Learning Results			
Short answer tests	Proof of short answer and/or practical applications of half extension and/or test type test	100	A2 A3 A5	B1 B2 B3 B4 B5	C1 C2 C6	D1 D4 D6

Other comments on the Evaluation

The proofs of short answer will be able to consist in proofs type test and/or practical applications of short extension or average. The methodology of the proofs of the second announcement will be of the same type that of the ones of the first announcement.

Sources of information

Basic Bibliography

Complementary Bibliography

Giles, Evett, Lui, **Mecánica de los fluidos e Hidráulica**, 3º Ed Mc Graw Hill,

Cengel, Cimbala, **Mecánica de Fluidos: Fundamentos y Aplicaciones**, Mc Graw Hill,

Martín Sanchez, F., **Nuevo Manual de Instalaciones de Fontanería, saneamiento y Calefacción**,

Código Técnico de la Edificación, www.mviv.es,

Hernández Muñoz, A., **Abastecimiento y Distribución de agua**, Colegio de Ingenieros de Caminos, Canales y Puertos,

Recommendations

Other comments

Devote the time indicated of personal work assigned, as well as resort to *tutorías personal with each professor to resolve the possible doubts that arise during the personal work of the student.

It recommends a total follow-up of the matter as well as an active attitude in the classes.