UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: LAYOUT AND DESIGN OF INDUSTRIAL FACILITIES
Code: 56370
Type: ELECTIVE
ECTS credits: 6
Degree: 353 - UNDERGRADUATE DEGREE PROG. IN MECHANICAL ENGINEERING (CR)
Academic year: 2021-22
Center: 602 - E.T.S. INDUSTRIAL ENGINEERING OF C. REAL
Group(s): 20
Year: 4
Duration: C2
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **JAVIER CONTRERAS SANZ** - Group(s): **20**

Building/Office	Department	Phone number	Email	Office hours
Edificio Politécnico 2-D12	MECÁNICA ADA. E ING. PROYECTOS	Vía Teams	Javier.Contreras@uclm.es	

2. Pre-Requisites

The student must have the following knowledge and skills:

- Knowledge: theory of structures, electrical technology, mechanical technology, among others.

- Basic skills in the use of computers.

- Knowledge of English, at least at the basic level.

3. Justification in the curriculum, relation to other subjects and to the profession

The subject of Facilities Planning is related to the subjects of the Mechanical Degree: Design and Calculation of Metallic and Concrete Structures and Theory of Structures and Industrial Constructions. The aim is that at the end of the course the student has the ability to design an industrial facility and its structure and installations.

4. Degree competences achieved in this course

Course competences

Code	Description
A04	To be able to transmit information, ideas, problems and solutions to a specialized audience.
A08	Appropriate level of oral and written communication.
A10	Ability to produce and develop projects in the field of industrial engineering and automation aimed at, and in accordance with the knowledge acquired as established in section 5 of Order CIN/351/2009, the construction, remodelling, repair, conservation, demolition, manufacturing, installation, assembly or use of: structures, mechanical equipment, power installations, electrical and electronic installations, industrial plants and installations and processes of manufacture and automatization.
A11	Ability to manage engineering project activities described in the previous competency.

5. Objectives or Learning Outcomes

Course learning outcomes

Not established.

Additional outcomes

The objective of the subject is to provide the student with sufficient technical knowledge so that he/she can undertake the design and calculation of an industrial complex, including both the architectural construction and the facilities thereof.

6. Units / Contents

Unit 1: Chapter 1: Introduction
Unit 2: Chapter 2: Product, process and schedule design
Unit 3: Chapter 3: Flow, space and activity relationships
Unit 4: Chapter 4: Layout planning models and design algorithms
Unit 5: Chapter 5: Quantitative facilities planning models

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-	Lectures	A10 A11	0.5	12.5	Y	N	

SITE]							
Class Attendance (practical) [ON-SITE]	Project/Problem Based Learning (PBL)	A10 A11	0.3	7.5	Y	N	
Computer room practice [ON-SITE]	Work with simulators	A10 A11	0.8	20	Y	Y	
Practicum and practical activities report writing or preparation [OFF-SITE]	Work with simulators	A04 A08 A10 A11	0.4	10	Y	Y	
Group tutoring sessions [ON-SITE]	Group tutoring sessions	A10	0.4	10	N	-	
Progress test [ON-SITE]	Assessment tests	A04 A08 A10 A11	0.16	4	Y	Y	
Project or Topic Presentations [ON-SITE]	Group Work	A04 A08 A10 A11	0.24	6	Y	Y	
Writing of reports or projects [OFF-SITE]	Group Work	A04 A08 A10 A11	3.2	80	Y	Y	
Total:			**6**	**150**			
Total credits of in-class work: 2.4			**Total class time hours: 60**				
Total credits of out of class work: 3.6			**Total hours of out of class work: 90**				

As: Assessable training activity
Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Projects	30.00%	30.00%	A group project will be delivered at the end of the term
Oral presentations assessment	15.00%	15.00%	Students will do an oral presentation of the group project
Test	25.00%	25.00%	Theoretical-practical partial tests will be carried out throughout the course
Assessment of activities done in the computer labs	15.00%	15.00%	Students will do individual computer practice
Assessment of problem solving and/or case studies	15.00%	15.00%	Practical cases will be solved evaluating the application of techniques learned in class
Total:	**100.00%**	**100.00%**	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

Continuous evaluation of all training processes that will be weighted to obtain a final grade between 0 and 10 according to current legislation as follows:

- Evaluation of laboratory practical classes in the computer room with application of specific software by assessing attendance at practical classes as well as the delivery of work done in a practice test in the computer room. Minimum grade: 4

- Tests consisting of the resolution of practical exercises similar to those carried out in the training activities throughout the course. Minimum grade: 4

- Written exams with theoretical questions, practice and case studies. Minimum grade: 4

- Supervised group work and group presentation throughout the course. Minimum grade: 4

Non-continuous evaluation:

Evaluation of all training processes that will be weighted to obtain a final grade between 0 and 10 according to current legislation as follows:

- Laboratory practical cases exam with specific software application. Minimum grade: 4

- Single delivery of practical exercises similar to those carried out in training activities throughout the course. Minimum grade: 4

- Written final exam with theoretical questions, practice and case studies. Minimum grade: 4

- Supervised individual work and final presentation. Minimum grade: 4

Specifications for the resit/retake exam:

Students who have not passed the course (grade 5 or higher) will attend it. To pass the subject in the extraordinary call they must pass the practical test, deliver and defend the project of the subject and submit to the final face-to-face test that will include all the contents of the subject.
Students who do not attend the extraordinary call will be considered as NOT SHOWN.

Specifications for the second resit / retake exam:

The same as the extraordinary call.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours
Computer room practice [PRESENCIAL][Work with simulators]	20
Practicum and practical activities report writing or preparation [AUTÓNOMA][Work with simulators]	10
Group tutoring sessions [PRESENCIAL][Group tutoring sessions]	10
Progress test [PRESENCIAL][Assessment tests]	4
Project or Topic Presentations [PRESENCIAL][Group Work]	6

Writing of reports or projects [AUTÓNOMA][Group Work]	80
Unit 1 (de 5): Chapter 1: Introduction	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.5
Class Attendance (practical) [PRESENCIAL][Project/Problem Based Learning (PBL)]	1.5
Unit 2 (de 5): Chapter 2: Product, process and schedule design	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.5
Class Attendance (practical) [PRESENCIAL][Project/Problem Based Learning (PBL)]	1.5
Unit 3 (de 5): Chapter 3: Flow, space and activity relationships	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.5
Class Attendance (practical) [PRESENCIAL][Project/Problem Based Learning (PBL)]	1.5
Unit 4 (de 5): Chapter 4: Layout planning models and design algorithms	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.5
Class Attendance (practical) [PRESENCIAL][Project/Problem Based Learning (PBL)]	1.5
Unit 5 (de 5): Chapter 5: Quantitative facilities planning models	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2.5
Class Attendance (practical) [PRESENCIAL][Project/Problem Based Learning (PBL)]	1.5
Global activity	
Activities	**hours**
Class Attendance (practical) [PRESENCIAL][Project/Problem Based Learning (PBL)]	7.5
Computer room practice [PRESENCIAL][Work with simulators]	20
Practicum and practical activities report writing or preparation [AUTÓNOMA][Work with simulators]	10
Group tutoring sessions [PRESENCIAL][Group tutoring sessions]	10
Progress test [PRESENCIAL][Assessment tests]	4
Project or Topic Presentations [PRESENCIAL][Group Work]	6
Writing of reports or projects [AUTÓNOMA][Group Work]	80
Class Attendance (theory) [PRESENCIAL][Lectures]	12.5
Total horas:	150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Enrique Mata Landete	Curso de introducción al urbanismo industrial					
James A. Tompkins, John A. White, Yavuz A. Bozer, J.M.A. Tanchoco	Facilities Planning	Wiley		978-0470444047	2010	
Javier Contreras y José Ignacio Muñoz	Complejos industriales	UCLM		84-608-0549-2	2007	