UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: PRODUCTION PLANNING AND CONTROL AND INDUSTRIAL ORG
Code: 57729
Type: CORE COURSE
ECTS credits: 6
Degree: 344 - CHEMICAL ENGINEERING
Academic year: 2021-22
Center: 1 - FACULTY OF SCIENCE AND CHEMICAL TECHNOLOGY
Group(s): 21
Year: 4
Duration: First semester
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **FRANCISCO JESUS FERNANDEZ MORALES** - Group(s): **21**

Building/Office	Department	Phone number	Email	Office hours
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Lecturer: **JUAN RAMON TRAPERO ARENAS** - Group(s): **21**

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Margarita Salas/ 304	ADMINISTRACIÓN DE EMPRESAS	926052446	juanramon.trapero@uclm.es	

2. Pre-Requisites

It is highly recommended that students should have passed the second year subject of economics and chemical industry.

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

This subject is focused on the topics related to Business Organization. This subjects also belong to the common module of industrial stream. The existence of this subject in the Chemical Engineering degree is justified given the necessity of providing the students the required tools to kwow: i) What is the importance of the manufacturing planning and control for a company and what is its role to achieve a competitive advantage; ii) how to determine the future organization demand using both quantitative and qualitative forecasting models; iii) how production planning ought to be organized on the basis of demand forecasts considering capacity, resources and cost factors; iv) the economic order quantity of inventory assets; v) the different stock control policies and production system based on "just in time" philosophy.

In addition, this subject help student get a deeper insight in the production subsystem previously introduced in the 2º course subject "Economics and Chemical industry"

4. Degree competences achieved in this course

Course competences

Code	Description
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
E15	Basic knowledge of production and manufacturing systems.
E17	Applied knowledge of business organization.
G01	Capacity for the direction, of the activities object of the engineering projects described in the competence G1.
G02	Knowledge in basic and technological subjects, which enables them to learn new methods and theories, and give them versatility to adapt to new situations.
G03	Ability to solve problems with initiative, decision making, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of Chemical Engineering.
G08	Capacity for organization and planning in the field of the company, and other institutions and organizations.
G09	Ability to work in a multilingual and multidisciplinary environment.
G17	Synthesis capacity

5. Objectives or Learning Outcomes

Course learning outcomes

Description

To possess capacity to differentiate operative and strategic decisions from production.
To know the operation that describes the control of production and inventories through the MRP methodology.
To have skill when planning production demand.
To know the main production planning tools at different levels of aggregation from the aggregate planning to the Production Master Program.
To be able to implement in MS-Excel the main algorithms of demand forecasting.

Additional outcomes

To be able to analyze the different factors that can influence both decisions regarding quality and statistical quality control tools.
To have skills for project management through PERT-CPM algorithms

To understand the diverse short-range production planning tools
To know the Lean-Just in Time production system.

6. Units / Contents

Unit 1: Introduction
Unit 2: Demand management
Unit 3: Aggregate production planning
Unit 4: Master Production Schedule
Unit 5: Material Requirement Planning
Unit 6: Short-range planning
Unit 7: Lean-Just in Time philosophy
Unit 8: Production control
Unit 9: Quality management

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-SITE]	Lectures	CB03 E15 E17 G01 G02 G03 G08 G09	1.5	37.5	N	-	
Computer room practice [ON-SITE]	Practical or hands-on activities	E15 E17 G03 G09 G17	0.3	7.5	Y	N	
Workshops or seminars [ON-SITE]	Project/Problem Based Learning (PBL)	CB03 E17 G01 G02 G08 G17	0.3	7.5	Y	N	
Group tutoring sessions [ON-SITE]	Project/Problem Based Learning (PBL)	CB03 E15 G01 G02 G08 G17	0.2	5	Y	N	
Progress test [ON-SITE]	Assessment tests	CB03 E15 E17 G01 G02 G03 G08 G09 G17	0.1	2.5	Y	N	
Study and Exam Preparation [OFF-SITE]	Self-study	E15 E17 G01 G02 G03 G08 G09 G17	3.6	90	N	-	
		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
Theoretical exam	0.00%	100.00%	
Assessment of problem solving and/or case studies	15.00%	0.00%	
Portfolio assessment	15.00%	0.00%	
Progress Tests	35.00%	0.00%	
Progress Tests	35.00%	0.00%	
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:

Those students that do not pass the subject via continuous evaluation, they should go through one written final exam with all the contents (theoretical and practice) of the subject

Non-continuous evaluation:

Evaluation criteria not defined

Specifications for the resit/retake exam:

Students Will be examined of all the contents of the subject in one written exam.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Domínguez Machuca, J. A. y otros	Aspectos tácticos y operativos en la producción y los servicios,	McGraw-Hill Interamericana			2003	
Domínguez Machuca, J. A. y otros	Dirección de operaciones : aspectos estratégicos en la produ	MacGraw-Hill		84-481-1848-0	2005	

Heizer, Jay	Dirección de la producción : decisiones estratégicas	Prentice Hall	84-205-2924-9	2001
Heizer, Jay	Dirección de la producción : decisiones tácticas	Prentice Hall	84-205-3036-0	2001
Nahmias, Steven	Análisis de la producción y las operaciones	McGraw-Hill	978-970-10-6239-5	2007
Trapero Arenas, Juan Ramón	Dirección y gestión empresarial	Mc Graw Hill Education	978-84-481-9038-5	2013