



1. General information

Course: OPERATIONS MANAGEMENT

Type: CORE COURSE

Degree: 2338 - MASTERS DEGREE PROGRAMME IN INDUSTRIAL ENGINEERING (AB)

Center: 605 - SCHOOL OF INDUSTRIAL ENGINEERS. AB

Year: 1

Main language: Spanish

Use of additional languages:

Web site:

Code: 310629

ECTS credits: 6

Academic year: 2020-21

Group(s): 10 11

Duration: First semester

Second language: English

English Friendly: N

Bilingual: Y

Lecturer: VIRGILIO GOMEZ RUBIO - Group(s): 10 11

Building/Office	Department	Phone number	Email	Office hours
ETSIIAB, Edificio D. Juan Manuel, despacho 0.D.9	MATEMÁTICAS	926053665	virgilio.gomez@uclm.es	http://edii.uclm.es/ediinet2/infContacto.php

Lecturer: FRANCISCO JAVIER RAMIREZ FERNANDEZ - Group(s): 10 11

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Lecturer: MARIA JOSE RUIZ ORTEGA - Group(s): 10 11

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2. Pre-Requisites

The knowledge concerning Production, Management, Statistics and Probability achieved in the Industrial Engineering Degree or others.

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

The industrial engineer usually develops his professional career in the business world, and mainly focused on the manufacture of products and services. Operations are a key issue in the modern companies, so these must be properly designed and planned. In addition, the decision-making process in Operations is a key factor to achieve the competitive advantage. This course provides student with a basic and applied knowledge about the decision-making process in Operations, also improving the knowledge about the modern production systems, the tools for the competitiveness improvement and the latest trends in Operations Management.

4. Degree competences achieved in this course

Course competences

Code	Description
A01	To have appropriate knowledge of the scientific and technological aspects of mathematical, analytical and numerical methods in engineering, electrical engineering, energy engineering, chemical engineering, mechanical engineering, continuous medium mechanics industrial electronics, automation, manufacturing, materials, quantitative management methods, industrial computing, town planning, infrastructures, etc.
A02	To plan, calculate and design products, processes, facilities and plants.
A03	To lead, plan and supervise multidisciplinary teams.
A04	To conduct research, development and innovation in products, processes and methods.
A05	To perform strategic planning and apply it to construction, production and environmental quality and management systems.
A06	To manage the technical and economic aspects of projects, installations, plants, companies and technology centres.
A07	To exercise functions of general, technical and R&D Project management in plants, companies and technology centres.
C01	Ability to organise and manage human resources. Knowledge of occupational risk prevention.
C02	Knowledge and skills for integrated project management.
C05	Apply the achieved knowledge and ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to the area of study
D01	Ability to design, construct and exploit industrial plants.
D05	Knowledge of transportation and industrial maintenance methods and techniques.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Be able to design, plan, evaluate and continually improve the operations subsystem in manufacturing and service enterprises.

Be able to conduct quality control of products and processes using advanced on-line measurement technologies.

Understand the interrelations between decisions in operations and be able to select and implement different strategies, models and solutions.

6. Units / Contents

Unit 1: Introduction to Operations Management

Unit 2: Demand forecasting

Unit 3: Product design

Unit 4: Process design

Unit 5: Capacity planning and location

Unit 6: Plant layout

Unit 7: Short-term operations planning

Unit 8: Maintenance management

Unit 9: Linear Programming

Unit 10: Queueing Theory

Unit 11: Software for Operations Research

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	A01 A02 A03 A04 A05 A06 A07 C02 C05 D01 D05	1.2	30	N	-	
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	A01 A02 A03 A04 A05 A06 A07 C01 C02 C05 D01 D05	0.8	20	N	-	
Individual tutoring sessions [ON-SITE]	Combination of methods	A01 A02 A03 A04 A05 A06 A07 C01 C02 C05 D01 D05	0.2	5	N	-	
Progress test [ON-SITE]	Assessment tests	A02 C01 C02 C05 D01 D05	0.1	2.5	Y	N	
Final test [ON-SITE]	Assessment tests	A02	0.1	2.5	Y	N	
Study and Exam Preparation [OFF-SITE]	Self-study	A01 A02 A03 A04 A05 A06 A07 C02 C05 D01 D05	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
Final test	70.00%	70.00%	Final exam based on theoretical and practical cases
Assessment of problem solving and/or case studies	20.00%	20.00%	Resolution of problems and case studies
Progress Tests	10.00%	10.00%	Online test
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:

The final exam will consist of theoretical-practical questions and problems. The final exam has a value of 70% of the final mark. The resolution of problems and practices in class has a value of 20% of the final mark. The completion of the online test has a value of 10% of the final mark. To pass the subject it is necessary to obtain a global grade of 5 or higher.

Non-continuous evaluation:

The final exam will consist of theoretical-practical questions and problems. The final exam has a value of 70% of the final mark. The resolution of problems and practices tutored by the teacher has a value of 20% of the final mark. The completion of the online test has a value of 10% of the final mark. To pass the subject it is necessary to obtain a global grade of 5 or higher.

Specifications for the resit/retake exam:

The same criteria will be applied as in the final exam.

Specifications for the second resit / retake exam:

Second resit/retake exam with theoretical and practical cases. The second resit/retake exam has the 100% of the global mark.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents	
Hours	hours
Individual tutoring sessions [PRESENCIAL][Combination of methods]	10
Progress test [PRESENCIAL][Assessment tests]	2.5
Final test [PRESENCIAL][Assessment tests]	2.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	80
Unit 1 (de 11): Introduction to Operations Management	

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 2 (de 11): Demand forecasting	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 3 (de 11): Product design	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 4 (de 11): Process design	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	1
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 5 (de 11): Capacity planning and location	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 6 (de 11): Plant layout	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	3
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 7 (de 11): Short-term operations planning	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	2
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 8 (de 11): Maintenance management	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	4
Group 11:	
Initial date: 23-09-2019	End date: 29-11-2019
Group 10:	
Initial date: 23-09-2019	End date: 29-11-2019
Unit 9 (de 11): Linear Programming	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	8
Group 10:	
Initial date: 02-12-2019	End date: 17-01-2020
Group 11:	
Initial date: 02-12-2019	End date: 17-01-2020
Unit 10 (de 11): Queueing Theory	

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Group 10:	
Initial date: 02/12/2019	End date: 17/01/2020
Group 11:	
Initial date: 02/12/2019	End date: 17/01/2020
Unit 11 (de 11): Software for Operations Research	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	5
Group 10:	
Initial date: 02-12-2019	End date: 17-01-2020
Group 11:	
Initial date: 02-12-2019	End date: 17-01-2020
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	41
Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	22
Progress test [PRESENCIAL][Assessment tests]	2.5
Final test [PRESENCIAL][Assessment tests]	2.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	80
Individual tutoring sessions [PRESENCIAL][Combination of methods]	10
Total horas: 158	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Carnero, C.	Problemas resueltos de Administración de la Producción y Operaciones	Paraninfo		978-84-9732-451-9	2013	
Chase, R. B., Aquilano, N.J., Jacobs, F.R.	Administración de Producción y Operaciones	McGraw-Hill		958-41-0071-8	2000	
Domínguez, J. A., García, S., Domínguez, M. A., Ruiz, A. Álvarez, M ^a J.	Dirección de Operaciones. Aspectos Tácticos y operativos en la producción y los servicios	McGraw-Hill		84-481-1803-0	2001	
Domínguez, J. A., Álvarez, M ^a J., García, S. Domínguez, M. A., Ruiz, A.	Dirección de Operaciones. Aspectos Estratégicos	McGraw-Hill		84-481-1848-0	2001	
Gaither, N., Frazier, G.	Administración de Producción y Operaciones	Thomson		970-686-031-2	2000	
Heizer, J. Render, B.	Dirección de la Producción. Decisiones Estratégicas	Prentice Hall		84-205-2924-9	2001	
Krajewski, L. J., Ritzman, L.	Administración de Operaciones Estrategia y Análisis	Pearson Prentice Hall		968-444-411-7	2000	
Plataforma docente Moodle	Incluirá toda la documentación relativa a la asignatura: documentos para seguimiento de clases magistrales, colecciones de problemas y otra información relevante para la asignatura https://campusvirtual.uclm.es/					
Ramirez, F. Javier; Garcia-Villaverde, Pedro Manuel	Ddi Tool		Albacete		2016	Aplicación informática para la optimización técnica y económica de procesos industriales multi-etapa
Schroeder, R. G.	Administración de Operaciones	McGraw-Hill		970-10-0088-9	2001	
Schroeder, Roger G.	Operations management in the supply chain: decisions and cases	McGraw-Hill,		978-1-259-06087-8	2013	