

## **UNIVERSIDAD DE CASTILLA - LA MANCHA**

# **GUÍA DOCENTE**

#### 1. General information

Course: Of Type: C(	PERATIONS MANAGEMENT			Code: 310629 ECTS credits: 6			
Degree: <sup>23</sup> EN	38 - MASTERS DEGREE PRO IGINEERING (AB)	OGRAMME IN IN	DUSTRIAL	AL Academic year: 2020-21			
Center: 60	5 - SCHOOL OF INDUSTRIAL	. ENGINEERS. A	B	Group(s): 10 11			
Year: 1				Duration: First semester			
Main language: Sp	banish		Sec	ond language: English			
Use of additional English Friendly: N							
Web site: Bilingual: Y							
Lecturer: VIRGILIO GOMEZ RUBIO - Group(s): 10 11							
Building/Office	/Office Department Phone number Email Office hours						
ETSII Albacete / 1.B.1	MATEMÁTICAS	926053665 virgilio.gomez@uclm.es http://edii.uclm.es/ediinet2/infContacto.php					
Lecturer: FRANCISCO	JAVIER RAMIREZ FERNAND	DEZ - Group(s): 1	0 11				
Building/Office	ding/Office Department Phone number Email Office hours						
ETSIIAB, Edificio D. Jua Manuel, despacho 0.D.	TSIIAB, Edificio D. Juan ADMINISTRACIÓN DE 926053146 franciscoj.ramirez@uclm.es http://edii.uclm.es/ediinet2/infContac			http://edii.uclm.es/ediinet2/infContacto.php			
Lecturer: MARIA JOSE RUIZ ORTEGA - Group(s): 10 11							
Building/Office	Department	Phone number	Email	Office hours			
Melchor de Macanaz 2.14	ADMINISTRACIÓN DE EMPRESAS	2326	mariajose.ruiz@uclm.es	http://edii.uclm.es/ediinet2/infContacto.php			

### 2. Pre-Requisites

The knowledge concerning Production, Management, Statistics and Probalility 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 competence	es 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	Related Competences Methodology (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:				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					

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Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]4Group 11:Initial date: 23-09-2019End date: 29-11-2019Group 10:Initial date: 23-09-2019End date: 29-11-2019Initial date: 23-09-2019End date: 29-11-2019Unit 9 (de 11): Linear ProgrammingHoursActivitiesHoursClass Attendance (theory) [PRESENCIAL][Lectures]8Group 10:Initial date: 02-12-2019Initial date: 02-12-2019End date: 17-01-2020Group 11:Initial date: 02-12-2019Initial date: 02-12-2019End date: 17-01-2020Group 11:Initial date: 02-12-2019Initial date: 02-12-2019End date: 17-01-2020Unit 10 (de 11): Queueing TheoryEnd date: 17-01-2020	Class Attendance (theory) [PRESENCIAL][Lectures]	3
Group 11:       End date: 29-019         Initial date: 23-09-2019       End date: 29-11-2019         Initial date: 23-09-2019       End date: 29-11-2019         Unit 9 (de 11): Linear Programming       Hours         Class Attendance (theory) [PRESENCIAL][Lectures]       8         Group 10:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Group 11:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Unit 10 (de 11): Queueing Theory       End date: 17-01-2020	Problem solving and/or case studies [PRESENCIAL][Problem solving and exercises]	4
Group 10:       End date: 23-03-2019         Initial date: 23-09-2019       End date: 29-11-2019         Unit 9 (de 11): Linear Programming       End date: 29-11-2019         Activities       Hours         Class Attendance (theory) [PRESENCIAL][Lectures]       8         Group 10:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Group 11:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Unit 10 (de 11): Queueing Theory       End date: 17-01-2020	Group 11:	End data: 20 11 2010
Initial date: 23-09-2019End date: 29-11-2019Unit 9 (de 11): Linear ProgrammingHoursActivitiesHoursClass Attendance (theory) [PRESENCIAL][Lectures]8Group 10:Initial date: 02-12-2019Initial date: 02-12-2019End date: 17-01-2020Group 11:Initial date: 02-12-2019Initial date: 02-12-2019End date: 17-01-2020Unit 10 (de 11): Queueing TheoryEnd date: 17-01-2020	Group 10:	
Unit 9 (de 11): Linear Programming         Activities       Hours         Class Attendance (theory) [PRESENCIAL][Lectures]       8         Group 10:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Group 11:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Unit 10 (de 11): Queueing Theory       End date: 17-01-2020	Initial date: 23-09-2019	End date: 29-11-2019
ActivitiesHoursClass Attendance (theory) [PRESENCIAL][Lectures]8Group 10:10:Initial date: 02-12-2019End date: 17-01-2020Group 11:11:Initial date: 02-12-2019End date: 17-01-2020Unit 10 (de 11): Queueing Theory11:	Unit 9 (de 11): Linear Programming	
Class Attendance (theory) [PRESENCIAL][Lectures]       8         Group 10:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Group 11:       Initial date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Unit 10 (de 11): Queueing Theory       End date: 17-01-2020	Activities	Hours
Group 10:       End date: 17-01-2020         Initial date: 02-12-2019       End date: 17-01-2020         Group 11:       End date: 02-12-2019         Initial date: 02-12-2019       End date: 17-01-2020         Unit 10 (de 11): Queueing Theory       End date: 17-01-2020	Class Attendance (theory) [PRESENCIAL][Lectures]	8
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         End date:         17-01-2020	Group 10:	End data: 17.01.0000
Initial date: 02-12-2019 End date: 17-01-2020 Unit 10 (de 11): Queueing Theory	Group 11:	
Unit 10 (de 11): Queueing Theory	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						
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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/	9				
Ramirez, F. Javier; Garcia- Villaverde, Pedro Manuel	Ddi Tool		Albacete		2016	Aplicación informática para la optimización técnica y económica de procesos industriales multietapa
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