



Universidad
Politécnica
de Cartagena



Centro
Universitario
de la Defensa

OPERATIONS MANAGEMENT SYLLABUS

Industrial Organization Engineering Degree

Academic year 2012-2013

1. Course details

Name	OPERATIONS MANAGEMENT		
Course field	Industrial Organization		
Code	511103001		
Degree Course	Industrial Organization Engineering Degree		
Programme	2009 (Decreto 269/2009 de 31 de julio)		
Faculty	Centro Universitario de la Defensa en la Academia General del Aire		
Type	Compulsory		
Duration	Annual course	Year	3 th
Language	Spanish/English		
ECTS	9	Hours / ECTS	25
		Total workload (hours)	225
Lectures Timetable		Room	
Classes/Practicals/Seminars timetable		Building	

2. Teaching Staff contact details

Head of the course	Juan Andrés Bernal Conesa		
Department	Of integrated areas		
Area of expertise			
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Office hours (for supervisions)	To be indicated at the beginning of the course		
Office hours location (for supervisions)	Oficce 36		

Lecturer 1			
Department			
Area of expertise			
Office location			
Phone		Fax	
E-mail			
URL / WEB			
Office hours (for supervisions)			
Location (for supervisions)			

3. Course outline

3.1. Presentation

The purpose of this course is to introduce concepts and models for effective and efficient operations management to the student. Its main objective is to analyze the role of production and operations management in the context of an organization, the relationship with other functional areas of the company and the analysis of different approaches to strategic and tactical decision making.

3.2. Year and duration within the degree programme

The "Operations management" course is studied in third year of the degree and it is an annual course. The aforementioned subject belongs to the compulsory subjects laid down by the University.

3.3. Description of the course

The activity of production enterprises is their raison to d'être. The company produces goods and/or services, which delivers to the market, and so has to not only coordinate all elements that make up its operations but also interrelate with other activities such as finance, marketing...The course deals with knowledge about the functional area of production and operations within the company, providing students with the necessary tools for productive operations in the Organization and considering two distinct but complementary aspects, which are strategic decisions and tactics. In this way it is intended to provide training about setting key strategic and tactical decisions in the field of operations management and production management. Thus, at the end of this

course, students should have acquired knowledge enabling them to address the design and development of new products, processes and technologies; to understand and to develop long, medium and short term production planning; to plan the productive capacity of the enterprise and its location; to distribute space in relation to the set of resources that the company has for its productive activity, that is, the physical distribution; and, finally, to understand the quality as a management philosophy.

3.4. Related courses. Prerequisites and recommendations

This course is related to the course “economics and business administration” of 2nd year, which consists of a brief introduction to the production system. There are no prerequisites for this course.

3.5. Special measures

Special measures which combine studies of the subject with military training and aeronautics activities shall be adopted. In particular, groups of cooperative work/learning of students with limited availability will be made, promoting the monitoring of learning through programming of group and planning and delivery of exercises through the Virtual Class.

4. Competences

4.1. Specific competences of the course

Understanding and analysis of the organizational aspects related to the company's production systems.

4.2. Generic and transversal competences

INSTRUMENTAL COMPETENCES

- T1.1 Analytical and summary skills
- T1.2 Organizational and planning skills
- T1.3 Oral and written communication skills in their mother tongue
- T1.4 Oral and written comprehension skills in a foreign language
- T1.5 Basic computer skills
- T1.6 Information management ability
- T1.7 Problem solving skills

- T1.8 Decision making ability

PERSONAL COMPETENCES

- T2.1 Critical and self-critical ability
- T2.2 Teamwork
- T2.3 Interpersonal skills
- T2.4 Ability to work in an interdisciplinary team
- T2.5 Ability to communicate with experts in other fields
- T2.6 Ability to deal with diversity and multiculturalism
- T2.8 Ethical commitment

SYSTEMIC COMPETENCES

- T3.1 Ability to apply theory to practice
- T3.2 Learning ability
- T3.3 Ability to adapt to new situations
- T3.4 Creativity
- T3.5 Leadership
- T3.6 Knowledge about other cultures and customs
- T3.7 Ability to work autonomously
- T3.8 Initiative and entrepreneurship
- T3.9 Quality concern
- T3.10 Motivation for success

4.3. General aims/ Degree specific competences

SPECIFIC COMPETENCES OF THE FIELD

E1.2.k Applied knowledge of business organization.

E1.3.c Ability to understand and analyze the organizational aspects related to the company's production systems.

SPECIFIC PROFESSIONAL COMPETENCES

E2.1 Ability for projects/reports design and development in the industrial organization engineering field

E2.2 Ability to supervise project-related activities in the field of industrial organization engineering

E2.3 Ability for problem-solving, decision-making, creativity, critical thinking, and for know-how and skills training

E2.4 Auditing of logistical and organizational production systems

E2.5 Easiness for binding specifications and regulations running

E2.6 Enterprise core departments management (production, finance, human resources)

E2.7 Ability to understand and operate aircraft systems, to act as consultant to

design them as well as to supervise and manage air operations

□E2.8 Ability to organize, supervise, protect and employ units in charge of force protection, command, control and operative support systems to air operations

4.4. Learning objectives

Students will acquire a set of conceptual, procedural skills and attitudes that will them enable to successfully develop and implement the various methods and management techniques of studied operations along the year, in the area of the productive system, being able to identify long and short term decisions in the area of operations of a company, to identify sources of ideas for new products and to select the most suitable products, to identify the basic characteristics of the different productive configurations and to select the most appropriate ones, according to economic and strategic criteria, to design a production process, incorporating decision-making related to human and technical resources, plant distribution and capacity based on economic and strategic criteria, select the location of the activity and identify the problem of quality and the different alternatives for the design of its management system.

5. Contents

5.1. Contents according to the Degree programme

Capacity and location decisions. Lay-out. Product design. Short, medium and long term production planning. Project management

5.2. Lectures programme

PART 1. STRATEGIC MANAGEMENT.

- Unit 1. Introduction to operations management.
- Unit 2. Design and product development.
- Unit 3. Plant capacity and location.
- Unit 4. Processes and plant layout.
- Unit 5. Production systems. JIT and lean manufacturing.

PART 2. TACTICAL AND OPERATIONAL MANAGEMENT

- Unit 6. Production planning and scheduling.
- Unit 7. Project management.
- Unit 8. Inventory control and storage.
- Unit 9. Quality management.
- Unit 10. Maintenance.

5.3. Classes/Seminars/practicals/tutorials programme

Session of exercises/practice/work will be carried out at the end of each unit with the aim that students become familiar with the practical application of the course contents and also their application and usefulness in real life. Learning objectives are:

- To promote the critical capacity and self-criticism, and teamwork.
- To apply the theoretical knowledge.
- To make reports of the work done, in order to explain the fundamentals and practice goals, analyze the results and justify the conclusions reached.
- To train the student for the management of specifications, regulations and mandatory standards.
- To encourage presentation to the rest of the students.

6. Teaching methodology

6.1. Learning activities

Activity	Lecturer role	Student role	ECTS
Lecture	Lectures using short-lived cooperative learning techniques. Solution of doubts raised by students. Issues of complexity and the most relevant aspects will be addressed.	<u>Attendance</u> : Attendance and participation	2,6
		<u>Non-attendance</u> : Study of the course.	2,9
Class of problems. Troubleshooting type and case studies	Problem solving and analysis of case studies guided by the teacher.	<u>Attendance</u> : Active participation. Solving exercises. Doubts exposition.	1,4
		<u>Non-attendance</u> : Study of the course. Solving of exercises proposed by the teacher.	0,7
Problems seminars and other activities of cooperative learning	Activities of cooperative work in which students work in groups to solve a set of problems, questions, and clarify concepts.	<u>Attendance</u> : Exposition to problems to the class or to groups. Explanation of the method of resolution to colleagues. Discussion of questions and sharing of the work done.	0,6
Individual and group tutorials	The tutorials will be individual or in group, in order to supervise individual or group learning. Review of problems by the groups and motivation for learning.	<u>Attendance</u> Troubleshooting group tutoring (10 students). Individual tutoring of query theory questions and problems.	0,3
		<u>Non-attendance</u> : Exposition of questions by e-mail	0,2
Exams	There will be a written exam.	<u>Attendance</u> : Exam attendance	0,3
TOTAL			9

7. Assessment

7.1. Assessment system

Methods	Criteria	Weighting	Generic competences
written examination (PEI)^{(1) (2)} (70 % final note)	Theoretical-practical and/or theoretical questions: individual learning of specif contents will be evaluated.	50 % exam	T1.1, T1.2, T1.3, T1.5, T1.6, T1.7 T3.1, T3.2, T3.3, T3.4, T3.9
	Problems and/or case studies: between 1 and 4 problems and/or practical cases. He is evaluated mainly the ability to apply knowledge in practice and the capacity for analysis.	50 % exam	T1.1, T1.2, T1.3, T1.5, T1.6, T1.7 T3.1, T3.2, T3.3, T3.4
Work, participation in class, exhibitions⁽³⁾ (30 % final note)	Evaluates participation in class, contribution to discussion topics, teamwork, presentations, capacity for innovation, critical evaluation of exposed presentations.	30 % final note	T1.1, T1.2, T1.3, T1.4, T1.5, T1.6, T1.7, T2.2, T2.3, T3.1, T3.2, T3.4, T3.7, T3.9

(1)It is necessary to obtain al least a score of 4 points of 10 in each of the written exms in order to add that marks to the rest. If the score is lower the student will fail the course and will have to take all exmas again in the next call.

(2) the characteristics and conditions of the exam will be specified in the call for the exam.

(3)They must comply with the headings/criteria of quality. Attitude and behavior will be also taken into account. The mark obtained in the practical exercises will be maintained until the next call for the exam.

7.2. Learning process monitoring

Monitoring of learning will take place through any of the following mechanisms:

- Areview to test the level of knowledge of the students on the coure contents, as well as the presentations of practical cases by the students-questions in class and resolution of problems.
- Participation in the analysis of news of interest discussed at class-level
- Involvement in team work presentations argumentation of group and individual assignments
- Argumentation in discussions forum
- Supervision during of face-to-face teamwork session and review of the problems proposed to be done in group students attitude individual and group tutorials.

8. Results, learning activities and assessment

8.1. Learning objectives/learning activities/results assessment

Learning objectives (4.4)	Lectures	Classes	Practicals	Tutorials	Continuous assessment	Assessment	Research project	Problems	Teamwork	Practicals reports	Oral presentation
Be able to identify the decisions in the area of operations of a company making difference between long and short term ones based on its strategic or operational nature.	■	■	■					■	■		■
Identify sources of ideas for new products and selection of the most suitable to identify products based on economic and strategic criteria	■	■	■					■	■		■
The basic characteristics of the different productive configurations to identify and select the most appropriate economic and strategic criteria	■	■	■					■	■		■
Design a production process, incorporating decision-making related resources (technology and human factor), the plant distribution and capacity. Select the location of the activity.	■	■	■					■	■	■	■
Identify the problem of quality and the different alternatives for the design of its system of management in the area of operations of a company	■	■	■					■	■		■

9. ECTS Allocation

COURSE		ATTENDANCE		CONVENTIONAL ATTENDANCE		NON-CONVENTIONAL ATTENDANCE		NON-ATTENDANCE	
CREDITS	TOTAL HOURS	AC	AH	CAC	CAH	NCAC	NCAH	NAC	NAH
9	225	5,2	130	4	100	1,2	30	3,8	95

10. SCHEDULE

Week	Units or activities	ATTENDANCE ACTIVITIES										NON-ATTENDANCE ACTIVITIES			TOTAL HOURS				
		Conventional					Non-conventional					Individual papers	Group papers	Self-study					
		Lectures	Classes	Practicals (laboratory classes)	Teamwork	Tutorials	Seminars	Visits	Assessment										
1	U1	3																3	
2	U1	1	2										1			2		6	
3	U2	3																3	
4	U2	1	2										1			2		6	
5	U3	3																3	
6	U3	2	1															3	
7	U3	2	1										1			4		8	
8	U4	3														4		7	
9	U4	3														4		7	
10	U4	3														2		5	
11	U4	2	1													2		5	
12	U4	1	2				0,5									2		5,5	
13	U4		3				1							3		2		9	
14	U4		2			3,5	1							4				11,5	
15	U4					4	1									4		9	
16	U5	3	1										1			4		9	
17	U5	2	1													4		7	
18	U6	3														4		7	
19	U6	3					1						1			4		9	
20	U6	2	1				1									4		8	
21	U6	1	2			3,5	1							2,75		2		12,25	
22	U6		3			4								4				11	
23	U7	2	1													3		6	
24	U7	2	1										1			2		6	
25	U8	3																3	
26	U8	3														3		6	
27	U8	2	1													2		5	
28	U8	1	2										0,75			2		5,75	
29	U9	3														2		5	
30	U9	2	1										1			2,5		6,5	
31	U9		3															3	
32	U0	3											1			2		6	
33	U10	2	1													2		5	
34	U10	1	2				1									2		6	
Exams																		7,5	
Others																		7,5	
Total Hours		65	35			15	7,5						7,5			8,75	13,75	72,5	225

11. REFERENCES

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Rodrigo Illera, C.; Gancedo Prieto, A. (2006): Aspectos estratégicos de la dirección de producción. Ed. Centro de Estudios Ramón Areces, Madrid

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