COURSE SYLLABUS
2016-2017

GENERAL INFORMATION

Course information	
Name	Operations Management
Code	DOI-MBA-611
Degree	Máster en Ingeniería Industrial (MII), Máster en Ingeniería de Telecomunicación (MIT), Máster in Business Administration (MBA)
Year	2nd
Semester	1st (Fall)
ECTS credits	6 ECTS
Type	Basic
Department	Industrial Management
Area	Manufacturing
Coordinator	Pedro Sánchez Martín

Instructor	
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DETAILED INFORMATION

Contextualization of the course

Contribution to the professional profile of the degree

Operations management designs, operates, and improves productive systems—systems for getting work done. Operations managers are found in banks, hospitals, factories, and government. They design systems, ensure quality, produce products, and deliver services. To perform these activities they work with customers and suppliers. They solve problems, reengineer processes, innovate and integrate to improve quality, speed-to-market, customization, or low cost. To get excellence in operations is critical to a firm's success.

More specifically, the contributions of this course to the professional profile are the following:

- Gaining an appreciation of the strategic importance of operations and supply chain management in a global business environment and to understand how operations relates to other business functions.
- Being able to describe the impact of operations and supply chain management on other functions within a firm, as well as on the competitive position of the firm. Being aware of the global nature of operations and the complexity of supply chains.
- Developing a working knowledge of the concepts and methods related to designing and managing operations and to create value along the supply chain: The basic steps involved in bringing a product to market from its design through production and delivery.
- Learning a skill set for continuous improvement: The ability to conceptualize how systems are interrelated, to organize activities effectively, to analyze processes critically, to make decisions based on data, and to push for continual process improvement.

Prerequisites

There are no prerequisites to attend this course. However, it is recommended to be familiar with the basic issues, capabilities, and limitations of the operations function. For instance, these concepts are learned in the course "Manufacturing and Production" of the first course of Máster en Ingeniería Industrial (MII) and Máster en Ingeniería de Telecomunicación (MIT).

CONTENTS

Competences and Learning Outcomes

Competences

General Competences

CG4.	Implementation of Concepts and Theories to Companies to find new business opportunities obtaining long-term competitive advantages
CG 6.	Ethical Commitment at the enforcement of moral values and the ones of the company applied to ethical and corporate social responsibility dilemmas.
CG 8.	Critical thinking and argumentation consistent with the understanding of knowledge and the know-how of companies, their external context and their management practices
CG 9.	Autonomy to learn how to continue the process of enhancing the cognitive skills and the relevant knowledge applied to the professional and business activity.

Learning outcomes:

RA 1.	Interconnect concepts in a multilateral and transversely way
RA 2.	Identify the right concepts for each situation.
RA 3.	Determine the scope and usefulness of theorical knowledge.
RA 4.	Assume of ethics and values associated to the performance of the professional career.
RA 5.	Pursue excellence in professional activities.
RA 6.	Assume a responsible attitude towards people, with the used means and resources.
RA 7.	Bear in mind the consequences that their activities and behaviours may affect to everyone else.
RA 8.	Identify, set and contrast hypothesis, variables and results in logical and critical way.
RA 9.	Review the options and alternatives with a critical thinking to allow discussion and argumentation of opposite opinions.
RA 10.	Develop their assignments and tasks with initial instructions and a basic follow up
RA 11.	Search and find appropriate resources to justify their activities and reports.
RA 12.	Enlarge and deepen at the report development.

TEACHING METHODOLOGY

General methodological aspects	
The best way of gaining a full understanding of Operations Management consists of showing and having real experiences on this topic. Consequently, all the proposed activities are focused on providing students real cases and practical experiences where implementation of operations management is essential for the improvement on company activities.	
In-class activities	**Competences**
▪ **Lectures and problem-solving sessions (28 hours)**: The lecturer will introduce the fundamental concepts of each chapter, along with some practical recommendations, and will go through worked examples to support the explanation. Active participation will be encouraged by raising open questions to foster discussion and by proposing short application exercises to be solved in class.	CG4
▪ **Case sessions (26 hours):** Under the instructor's supervision, students, will apply the concepts and techniques covered in the lectures to real cases.	CG6, CG8, CG9
▪ **Practice sessions (6 hours):** Under the instructor's supervision, students, divided in small groups, will apply the concepts and techniques covered in the lectures to real problems.	CG9
Out-of-class activities	**Competences**
▪ Personal study of the course material and resolution of the proposed exercises (56 hours).	CG4, CG9
▪ Case session preparation to make the most of in-class time (52 hours).	CG6, CG8
▪ Practice session preparation to make the most of in-class time (12 hours).	CG9

ASSESSMENT AND GRADING CRITERIA

Assessment activities	Grading criteria	Weight
Mid-term exam	▪ Understanding of the theoretical concepts. ▪ Application of these concepts to problem and case solving. ▪ Critical analysis of numerical exercises' results.	20%
Final exam	▪ Understanding of the theoretical concepts. ▪ Application of these concepts to problem and case solving. ▪ Critical analysis of numerical exercises' results.	40%
Case Resolution	▪ Class participation. ▪ Test Results (Pre and post discussion in class).	25%
Practice Test	▪ Class participation. ▪ Test Results (Pre and post practice).	15%

GRADING AND COURSE RULES

Grading

Regular assessment

- **Exams** will account for 60%, of which:
  - Mid-term: 20%
  - Final exam: 40%
  - The *Exam global mark* is computed weighting one third the mid-term mark and two-thirds the final exam
- **Cases and practices** will account for the remaining 40%, of which:
  - Cases: 25%
  - Practices: 15%

In case that the *exam global mark* is equal or lower than 3.5, the final grade will be the *exam global mark*. Otherwise, the final grade is computed weighting the different marks as the previously shown percentages. In order to pass the course, the final grade should be greater or equal to 5.0.

Retakes

Cases and practice marks will be preserved. The resulting grade will be computed as follows:

- Final exam: 60%
- Cases: 25%
- Practices: 15%

In case that the final exam mark is equal or lower than 3.5, the final grade will be the final exam mark. Otherwise, the final grade is computed weighting the different marks as the previously shown percentages. In order to pass the course, the final grade should be greater or equal to 5.0.

Course rules

- Class attendance is mandatory according to Article 93 of the General Regulations (Reglamento General) of Comillas Pontifical University and Article 6 of the Academic Rules (Normas Academicas) of the ICAI School of Engineering. Not complying with this requirement may have the following consequences:
  - Students who fail to attend more than 15% of the lectures may be denied the right to take the final exam during the regular assessment period.

Students who commit an irregularity in any graded activity will receive a mark of zero in the activity and disciplinary procedure will follow (cf. Article 168 of the General Regulations (Reglamento General) of Comillas Pontifical University).

WORK PLAN AND SCHEDULE[1]

In and out-of-class activities	Date/Periodicity	Deadline
Mid-term exam	Week 10	
Final exam	December	
Practice sessions	Weeks 6, 12 and 14	
Review and self-study of the concepts covered in the lectures	After each chapter	–
Problem-solving	During theory sessions	–
Case Preparation (Test)	Before every case	–
Case Learning (Test)	Few days after every case	–
Final exam preparation	December	–

STUDENT WORK-TIME SUMMARY			
IN-CLASS HOURS			
Lectures	**Problem-solving**	**Case sessions**	**Practices**
22	6	26	6
OUT-OF-CLASS HOURS			
Self-study	**Problem preparation**	**Case preparation and evaluation**	**Practice**
44	12	52	12
		ECTS credits:	**6 (180 hours)**

BIBLIOGRAPHY

Basic bibliography

[1] A detailed work plan of the subject can be found in the course summary sheet (see following page). Nevertheless, this schedule is tentative and may vary to accommodate the rhythm of the class.

- Notes and slides prepared by lecturers (available in Moodle).
- R.S. Russell y B. W. Taylor. Operations Management. Creating Value Along the Supply Chain. (7ª ed.). John Wiley & Sons, Inc.. Estados Unidos (2011) .

Complementary bibliography

- F. R. Jacobs and R.B. Chase, Operations and Supply Chain Management, 13th Edition. New York, McGraw Hill, 2011
- J. Heizer y B. Render. Dirección de la Producción y de Operaciones. Tomo I: Decisiones estratégicas Tomo II: Decisiones tácticas. (11ªed.). Pearson. España (2015).
- L. J. Krajewski, L.P. Ritzman y M. K. Malhotra. Administración de operaciones. Procesos y cadena de suministro. (10ªed.). Pearson. Mexico (2013).
- J. Mangan, C. Lalwani y T. Butcher. Global Logistics and Supply Chain Management (1ªed.). John Wiley & Sons. Great Britain (2008).
- P.P. Dornier, R. Ernst, M. Fender y P. Kouvelis. Global Operations and Logistics. Text and Cases (1ªed.). John Wiley & Sons. Estados Unidos (1998).

	IN-CLASS ACTIVITIES				OUT-OF-CLASS ACTIVITIES				LEARNING OUTCOMES
Week	h/w	LECTURE & PROBLEM SOLVING	LAB	ASSESMENT	h/w	SELF-STUDY	LAB PREPARATION AND REPORTING	OTHER ACTIVITIES	Learning Outcomes
1	2	Course presentation and Chapter 1. Introduction to Operations Management. Global Operations (2h)			5	Review and self-study (5h)			RA1, RA3
2	4	Chapter 2. Quality Management (2h), one case of Chapter 1 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA2, RA3, RA4, RA5
3	4	Chapter 2. Quality Management (2h), one case of Chapter 1 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA2, RA3, RA4, RA5
4	4	Chapter 2. Problems of chapter 2 (2h), one case of Chapter 2 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA4, RA6, RA7, RA10
5	4	Chapter 3. Inventory Management (2h), one case of Chapter 2 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA4, RA6, RA7, RA10, RA11, RA12
6	4	Chapter 3. Inventory Management (2h)	Practice 1. Bullwhip Effect (2h)		7	Review, self-study and case-solving (5h)	Practice preparation (2h)	Tests: Pre and Post practice (1h)	RA7, RA8, RA9
7	4	Lecture by specialist (2h), one case of Chapter 4 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA4, RA6, RA7, RA10, RA11, RA12
8	4	Chapter 4. SCM (2h), one case of Chapter 4 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA12
9	4	Chapter 4. SCM (2h), one case of Chapter 4 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA4, RA7, RA8
10	4	Chapter 5. Operations Planning (2h)		Mid-term exam (2h)	16				RA4, RA7, RA8
11	4	Chapter 5. Operations Planning (2h). One case of chapter 5 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post case discussion (1h)	RA4, RA6, RA7, RA10, RA11, RA12
12	4	Lecture by specialist (2h)	Practice 2. MRP (2h)		7	Review, self-study and case-solving (5h)	Practice preparation (2h)	Tests: Pre and Post practice (1h)	RA5, RA9
13	4	Chapter 6. Lean Systems (2h)	Practice 3. Value Stream Map (2h)		7	Review, self-study and case-solving (5h)	Practice preparation (2h)	Tests: Pre and Post practice (1h)	RA4, RA5, RA6, RA7, RA9, RA10, RA11, RA12
14	4	Chapter 6. Lean Systems (2h). Lecture by a specialist (2h)			7	Review, self-study and case-solving (7h)			RA5, RA9
15	2	one case of Chapter 6 (2h)		Case	4	Review, self-study and case-solving (4h)		Tests: Pre and Post practice (1h)	RA5, RA9
16	4	Course Review (2h). one case of Chapter 6 (2h)		Case	7	Review, self-study and case-solving (7h)		Tests: Pre and Post practice (1h)	RA5, RA9
17	2	Course review (2h)			4				RA5, RA9