TEACHING PLAN FOR

Management of International Operations

1. Basic description

Name of the course: Management of International Operations
Academic year: 2010-2011
Year: 2nd
Term: 3rd
Degree / Course: Bachelor's Degree in International Business and Marketing
Code: 42303
Number of credits: 4
Total number of hours committed: 100
Teaching language: English
Lecturer: Àlex Grasas
Seminar Instructors: Cecilia Mayans (Group 1) and Àlex Grasas (Group 2)
Timetable:

GROUP 1	**GROUP 2**
Lectures Monday 18:15 – 19:15 Tuesday 16:15 – 17:15	Lectures Monday 16:15 – 17:15 Tuesday 18:15 – 19:15
Seminars 1A: Friday, 14:30 – 15:25 1B: Friday, 15:30 – 16:25 1C: Friday, 16:30 – 17:25	Seminars 2A: Friday, 18:00 – 18:55 2B: Friday, 19:00 – 19:55 2C: Friday, 20:00 – 20:55

Office Hours & Contact information:

- Àlex Grasas: alex.grasas@prof.esci.es
  Monday from 17.15h to 18.15h
- Cecilia Mayans: cecilia.mayans@prof.esci.es

2. Presentation of the course

Operations Management (OM) is one of the key functional areas in any organization or company that deals with the production of goods and services. It is concerned with managing the processes that transform inputs (materials, labor, energy, customers) into outputs (goods and services). Everything we wear, eat, use, read or play with, has been produced, and an operations manager organized its production. This course is concerned with the tasks, issues and decisions of those operations managers who have made the services and products on which we all depend.

The OM field faces many challenges that are consequence of globalization, new product proliferation, technology advances, and integration with other functional areas of the company (marketing, finances, etc.). For this reason, we analyze Operations in an international context where efficiency is the main goal.

In this course we are going to study the main concepts, tools and quantitative models that companies use to manage their Operations. We are going to do so from a very practical standpoint, studying business cases and solving exercises.

3. Competences to be achieved in the course

General competences	**Specific competences**
Instrumental competences G.I.1. Ability to search, analyze, assess and summarize information. G.I.3. Ability to organize and plan. G.I.5. Ability to take decisions in complex and changing environments. General personal competences G.P.6. Capacity to foresee events. Generic systemic competences	Professional competences E.P.5. Ability to take strategic managerial decisions whilst taking into account the economic, cultural, social and political determinants specific to a particular area. E.P.7. Illustrate businesses' activities in a practical way by visiting companies, having professionals invited to class sessions or by developing and analyzing case studies. E.P.8. Ability to take functional decisions within an organization with international activity.

G.S.2. Ability to observe. G.S.3. Ability to think globally. G.S.5. Ability to learn on one's own. Competences for applicability G.A.1.Ability to apply acquired knowledge and skills. G.A.2. Ability to use quantitative criteria and qualitative insights when taking decisions. G.A.5. Ability to understand an economic organization with a global perspective.	E.P.12. Ability to critically evaluate local information contexts, knowledge or principles of a more global nature. E.P.23. Ability to apply and expand upon abstract reasoning. E.P.24. Develop the ability to synthesize.

The above competences interrelate with the basic competences set out in Royal Decree 1393/2007, namely:

a. competence to **comprehend knowledge, on the basis of general secondary education**
b. competence to **apply knowledge** to day-to-day work in international management or marketing, in particular, ability to develop and defend arguments and to solve problems
c. competence to **gather and interpret** relevant **data**, enabling the development of critical judgments on the economic and social reality
d. competence to **communicate and transmit information** (ideas, problems, solutions) to a specialized and non-specialized public
e. competence to **develop learning activities** in a relatively autonomous manner.

In order to establish a correspondence between the basic competences and those developed in the degree, these are grouped according to two criteria. Thus, the competences developed in the subject are structured into those that are seen as a development or specification of basic competences and those that define the professional profile of the graduate, with respect to general and specific competences.

Basic competence: **understanding of knowledge**
General competences G.I.3, G.S.2, G.A.2

Basic competence: **application of knowledge**
General competences G.S.3
Specific competences E.P.12, E.P.23

Basic competence: **gather and interpret data**
General competences G.I.1, G.P.6
Specific competences E.P.24

Basic competence: **develop learning activities**
General competences G.I.3, G.S.5
Specific competences E.P.12

Competences that define the professional profile which are not included under basic competences

In general, these competences combine the following key elements for professionalizing students in the area of international business and marketing:
- provide students with the capacity to adapt to dynamic teams and environments
- provide students with the capacity to create their own integral vision of the operation of a business or international marketing project
- provide students with the capacity to take complex decisions and carry out negotiation processes

General competences G.I.5, G.A.1, G.A.5
Specific competences E.P.5, E.P.7, E.P.8

Own competences of the subject
Analyze the impact of logistics' activities in establishing international business strategy.

4. Contents

Chapter 1: Introduction to Operations and Supply Chain Management
What is OM and SCM? History of OM. Goods vs Services. OM Decisions. Productivity.

Chapter 2: Linear Programming applied to OM problems
Introduction to Linear Programming (LP). Graphical LP. LP using Excel Solver. LP Applications. Integer LP.

Chapter 3: Operations Strategy
Operations and Supply Chain Strategy. Product and Service Design. Process Strategy. Manufacturing Process Flow Design.

Chapter 4: Process Analysis
Process Analysis. Flowcharts. Types of Processes. MTS vs MTO. Process Performance. Little's Law. Bottlenecks. Theory of Constraints. Capacity Analysis: Multiple Products & Batches.

Chapter 5: Aggregate Planning
Enterprise Resource Planning (ERP). Forecasting. Sales and Operations Planning. Aggregate Planning Techniques. Input/Output Curves. Yield Management.

Chapter 6: Queuing Management
Types of Queues. Stochastic Queues. Queuing Laws. Queuing Systems. Psychology of Waiting Lines. Simulation.

Chapter 7: Inventory Management
Purposes of Inventory. Inventory Costs. ABC. Inventory Systems. Single-period Inventory Model. Economic Order Quantity (EOQ). Quantity Discounts. Probabilistic Models. Safety Stock. Inventory Aggregation.

Chapter 8: Lean Manufacturing and Quality
Toyota Production System. Lean Implementation. Total Quality Management. Cost of Quality. Six-Sigma Quality. Quality Tools.

5. Assessment

Ordinary Evaluation

This course is graded from 0 to 100 points, and its regular evaluation will be determined on the following basis:

Assessment elements	Time period	Type of assessment		Assessment agent			Type of activity	Grouping		Weight (%)
		Comp	Opt	Lect.	Self-assess	Co-as.		Indiv	Group (#)	
Class participation	Throughout the course	X		X			Application, Conceptual and Synthesis	X		9%
Concept Review Quizzes	Periodically – After each chapter	X			X		Conceptual	X		8%
Exercise Sets	Periodically	X		X			Application	X		15%
Case Analyses	Periodically	X		X			Application and Synthesis		X	18%
Final Exam	Exams Week	X		X			Synthesis	X		50%

Extraordinary Evaluation (September)

At the extraordinary exam sitting, the final grade for the course will be determined on the following basis:

Exercise Sets	15%
Case Analyses	15%
September Exam	70%

Further specifications on grading and assignment rules:

- Both for the Ordinary and Extraordinary Evaluations, passing the course requires a minimum grade of 40 points in the Exam AND an average grade of at least 50 points in total.
- An active involvement in the Glossary of Terms elaboration provides extra credit
- All evaluation items are mandatory. Failing to submit (or submitting late) an assignment results in a 0 in that item.
- Failing to take the final exam implies the qualification of “Not Attended”.
- If two (or more) students (or groups) turn in the same or very similar assignments, they will be given zero points.

Competences Assessment:

	GI1	GI3	GI5	GP6	GS2	GS3	GS5	GA1	GA2	GA5
Concept Review Quizzes	X						X			X
Exercise Sets (individual)	X	X			X	X	X	X	X	X
Case Analyses (teams)	X	X	X	X	X	X	X	X	X	X
Final Exam	X	X	X	X	X	X	X	X	X	X

	EP5	EP7	EP8	EP12	EP23	EP24	Own
Concept Review Quizzes							X
Exercise Sets (individual)				X			X
Case Analyses (teams)	X	X	X	X	X	X	X
Final Exam			X	X		X	X

6. Bibliography and teaching resources

Basic bibliography (required):

- Textbook: Jacobs, F. R., R. B. Chase, and N. J. Aquilano. Operations and Supply Chain Management, 12th edition. Mc Graw Hill, New York, 2009. Referred as JCA thereafter.

  Correspondence between Course Chapters and Book Chapters:

  Chapter 1: book chapters 1 and 2.

  Chapter 2: book chapter 2A.

  Chapter 3: book chapters 1, 2, 4 and 7.

  Chapter 4: book chapters 6 and 20.

  Chapter 5: book chapters 14, 15 and 16.

  Chapter 6: book chapters 8A and 19A.

  Chapter 7: book chapter 17.

  Chapter 8: book chapters 9 and 12.

Supplementary bibliography:

- Goldratt, E. M, and J. Cox. The Goal: A Process of Ongoing Improvement. North River Press, 1992.
- Render, B., R. M. Stair, and, M. E. Hanna. Quantitative Analysis for Management, 10th edition. Prentice Hall, 2009.
- Nahmias, S. Production and Operations Analysis, 6th edition. McGraw-Hill, 2008.

- Heizer, J., and B. Render. Operations Management, 9th edition. Prentice Hall, 2007.
- Chopra, S., and P. Meindl. Supply Chain Management, 4th edition. Prentice Hall, 2009.

Teaching resources (posted on Aul@-Esci)

- PowerPoint slides for each session.
- Exercise sets.
- Business cases.
- Glossary of Terms.
- Concept Review quizzes.

7. Methodology

Lectures (*face-to-face in the classroom*): 20 lectures where concepts, theoretical background and basic examples will be taught.

Seminars (*face-to-face in the classroom)*: 9 seminars where business cases and practical exercises will be discussed among students, guided by the instructor.

Exercise Sets (*directed outside the classroom*): 5 sets of exercises to be independently solved in order to learn and understand the practical concepts taught in class.

Business Cases (*directed outside the classroom*): 6 business cases to be discussed and resolved by teams in order to apply the course concepts to a realistic business problem.

Concept Review quizzes (*independent work outside the classroom*): 8 multiple-choice tests to be answered online in order to evaluate the learning of the course main concepts.

Final Exam (*independent work*).

The following table shows the approximate amount of time required each week to successfully follow the course:

	Lecture	Seminar	Independent Study	Team Work	Total
Week 1	2		2	2.5	**6.5**
Week 2	2	1	5.5		**8.5**
Week 3	2	1	5		**8**
Week 4	1	1	1	3	**6**
Week 5	2	1	5.5		**8.5**
Week 6	2	1	3	2.5	**8.5**
Week 7	2	1	5		**8**
Week 8	2	1	6.5		**9.5**
Week 9	2	1	3.5	3	**9.5**
Week 10	2	1	4	5.5	**12.5**
Week 11	1			1.5	**2.5**
Exam		2	10		**12**
Total	**20**	**9**	**51**	**18**	**100**

8. Scheduling activities

1) Allocation of hours between theory and practical lessons (based on the number of credits in the curriculum):

   2 h of lecture and 1 h of seminar (beginning in the second week of class)

2) Scheduling of activities according to the curriculum.

Week	Session	Date	Activities before class	Time	Activities in class	Time
1	Lecture: Chapter 1	March 28			Course introduction. What is OM and SCM? History of OM. Goods vs Services. OM Decisions. Productivity	1 h
	Case Chapter 1	March 29	Read and prepare case: Benihana of Tokio. Answer preparation questions	2.5 h	Case discussion	1 h
	After-class activities:	Read & Study JCA pp 4, 6-13, 14-18, 28-29. Answer Quiz 1				2 h
2	Lecture: Chapter 2.1	April 4	Solve exercise individually: Nursing Staff	0.5 h	Introduction to Linear Programming (LP). Graphical LP. Example: Furniture Manufacturing	1 h
	Lecture: Chapter 2.2	April 5	Read JCA pp 36-44	1 h	LP using Excel Solver. LP Applications	1 h
	Seminar 1	April 8	Solve exercise individually: Distribution Centers	2 h	Exercise resolution and discussion	1 h
	After-class activities:	Read & Study JCA pp 36-44. Practice Problem 1 (JCA pp 45-49). Answer Quiz 2				3 h
3	Lecture: Chapter 2.3	April 11	Read Integer Programming notes	1 h	Integer LP. Example: Plant Location	1 h
	Lecture: Chapter 3.1	April 12	Read case: IKEA: Design and Pricing. Answer questions (JCA pp 116-117)	1 h	What is Operations and SC Strategy? Process Strategy. Manufacturing Process Flow Design. Product and Service Design	1 h
	Seminar 2	April 15	Solve exercise individually: Locating Services	1 h	Exercise resolution and discussion	1 h
	After-class activities:	Read & Study JCA pp 3, 21-25, 91-96, 108-109, 206-211. Answer Quiz 3				2 h
4	Holiday	April 25				
	Lecture: Chapter 4.1	April 26	Read JCA pp 159-172, 175-177	1 h	Process Analysis. Flowcharts. Types of Processes. Measuring Process Performance. Example: Bread-Making Operation	1 h
	Seminar 3	April 29	Read and prepare case: Kristen's Cookie Company (JCA p 184). Answer the Key Questions (JCA p 185)	3 h	Case discussion	1 h

Week	Session	Date	Activities before class	Time	Activities in class	Time
5	Lecture: Chapter 4.2	May 2	Review Process Analysis concepts	0.5 h	Process Analysis Simulation. Little's Law. Synchronization	1 h
	Lecture: Chapter 4.3	May 3			Theory of Constraints. Video: The Goal. Capacity Analysis: Multiple Products & Batches	1 h
	Seminar 4	May 6	Solve exercise individually: Manufacturing Mugs	2 h	Exercise resolution and discussion	1 h
	After-class activities:	Read & Study JCA pp 159-172, 175-177, 679-683, 686-688, 694-696. Answer Quiz 4				3 h
6	Lecture: Chapter 5.1	May 9	Read and ponder exercise (don't need to solve it): Dynamic Remanufacturing	0.5 h	ERP. Forecasting. Sales and Operations Planning. Aggregate Planning	1 h
	Lecture: Chapter 5.2	May 10			Aggregate Planning Techniques. Input/Output Curves. Yield Management	1 h
	Seminar 5	May 13	Read and prepare case: Gimondo's Aggregate Plan	2.5 h	Exercise resolution and discussion	1 h
	After-class activities:	Read & Study JCA pp 455-465, 467-472, 515-534. Practice Problem JCA pp 535-537. Answer Quiz 5				2.5 h
7	Lecture: Chapter 6.1	May 16			Types of Queues. Stochastic Queues. Queuing Laws	1 h
	Lecture: Chapter 6.2	May 17	Read JCA pp 277-290, 653-654, 658-663	1 h	Queuing Systems. Psychology of Waiting Lines. Simulation	1 h
	Seminar 6	May 20	Solve exercises individually: Queuing	2 h	Exercise resolution and discussion	1 h
	After-class activities:	Study JCA pp 277-290, 653-654, 658-663. Practice Problems 1 & 2 (JCA p 298). Answer Quiz 6				2 h

Week	Session	Date	Activities before class	Time	Activities in class	Time
8	Lecture: Chapter 7.1	May 23	Read JCA pp 545-553, 569-570	1 h	Purposes of Inventory. ABC. Single-Period Problem	1 h
	Lecture: Chapter 7.2	May 24	Read JCA pp 553-558, 565-567	1 h	Economic Order Quantity. Quantity Discounts	1 h
	Seminar 7	May 27	Solve exercises individually: Inventorying	2.5 h	Exercises resolution and discussion	1 h
	After-class activities:	Study JCA pp 545-558, 565-567, 569-570. Practice Problems 1 & 2 (JCA pp 576-577)				2 h
9	Lecture: Chapter 7.3	May 30	Read JCA pp 558-564	1 h	Probabilistic Models	1 h
	Lecture: Chapter 7.4	May 31	Read JCA pp 572-574, Inventory Aggregation notes	0.5 h	Inventory Consolidation	1 h
	Seminar 8	June 3	Read and prepare case: O Noso Lar	3 h	Exercise resolution and discussion	1 h
	After-class activities:	Study JCA pp 558-564, 572-574, Inventory Aggregation notes. Practice Problems 3 & 4 (JCA p 577). Answer Quiz 7				2 h
10	Lecture: Chapter 8.1	June 6	Read JCA pp 403-410,412-418	1 h	Toyota Production System. Lean Implementation	1 h
	Lecture: Chapter 8.2	June 7	Read JCA pp 307-319, 320-322	1 h	Total Quality Management. Cost of Quality. Six-Sigma Quality. Quality Tools	1 h
	Game	TBD			Game	3 h
	Seminar 9	June 10	Read and prepare case: Surgikos. Answer preparation questions	2.5 h	Exercise resolution and discussion	1 h
	After-class activities:	Study JCA pp 307-319, 320-322, 403-410,412-418. Answer Quiz 8				2 h
11	Holiday	June 13				
	Lecture: Game Debrief	June 14	Prepare Game Reports	1.5 h	Game Debriefing. Conclusions	1 h

A red shaded cell indicates an assignment submission