

## **Mandatory**

### **CREATING VALUE THROUGH OPERATIONS**

4 ECTS

#### **LEARNING OBJECTIVES**

Understand the strategic impact of operations, and know how the design and management of operating systems can be the decisive element for the definition and implementation of the strategy, providing key elements for radical and sustainable differentiation. In the current context, in which aspects such as digitization and social and environmental sustainability are key, operations can and must lead the transformation so that companies are oriented to the creation of shared value throughout their Supply Chain.

Learn to design and manage operations systems and Supply Chains aligned with the strategy, understanding the role that each of the key elements of these systems, processes and flows play to achieve excellence.

Understand the importance of project management and learn to apply tools for its management both internally in each company and throughout the Supply Chain

Understand the fundamental role of operations in innovation management for product, process and organizational improvement in the context of digital transformation and Industry 4.0

Understand the fundamental role that operations play in social and environmental sustainability policies in the context of creating shared value to achieve excellence.

Learn to prepare and communicate reports on real companies, proposing operational improvements.

#### **PROGRAM**

#### **INTRODUCTION**

The objective of the course is to introduce the most relevant aspects of the operations management of both products and services, providing a broad and integrated vision of the fundamental concepts and techniques and developing a vision of the new role of operations in the creation of shared value for all stakeholders in the supply chain, within the company's global strategy, including the impact that operations have on the social and environmental context and the way in which they must be addressed in order to contribute decisively to sustainability.

The first session presents the operations and their relationship with the general strategy of the company.

Session 2 introduces the concept of project and project management.

Session 3 completes the introduction to operations, exploring its language and introducing a vision of processes, which emphasizes the transformation of products and services.

Sessions 4 and 5 introduce the philosophy and main tools of what has probably done the most for operational excellence, "lean management", through the layman's game. In session 6 we will see a complete real case on the implementation of lean management in the organization.

Sessions 7, 8 and 9 will be dedicated to the discussion of the main elements related to the optimization of the main variables of operations, efficiency, quality and service: the search for and elimination of waste, Quality management and continuous improvement.

Sessions 10, 11, 12 and 13 will be dedicated to integral logistics and supply chain management with a global perspective, where the main methodologies for the design and management of complex processes are explored, management principles are introduced to the networks of organizations that constitute the Supply Chain, or Supply Chain and the strategies and processes of digital transformation.

In session 14 we will see the approach to technological innovation, from the perspective of operations, visiting the most innovative company in the world and discussing with some of its managers.

Finally, the last session integrates all the previous ones with the presentation and discussion of the practical work developed by the participants.

## **SESSION 1**

In this first session we will introduce the fundamentals in operations management and its relationship with strategy.

In the corresponding folder, you will see a document with a brief introduction on the direction of operations and its relationship with the strategy. At the end of the document you will see that I tell you how to prepare the session. The objective is that before coming to class you have been able to reflect on what is the competitive strategy of a company (yours, or one that you like especially for some reason), on how the operations in that company are conceived and in what way do you think these operations contribute or may contribute to the strategy of the company in question. You will see that there is a video with an example of a company, Southwest Airlines, that will "inspire" you to prepare the session.

In class, we will discuss your own examples and draw the appropriate conclusions about it.

## **SESSION 2**

In this session we will make an introduction to project management: the fundamentals and main tools for its design and management through the case of the organization of the famous tennis tournament, Masters Series Madrid.

*DM: Masters Series Madrid (DO1-111-M)*

## **SESSION 3**

In this session we will develop the basic concepts and fundamentals in the design and analysis of Operations. To do this, we will see a real case about a non-profit organization that manages an industrial laundry process with people with borderline intelligence. Please read the case and, later, advance in the application until you reach the simulation developed on that process. There you will

find a series of questions to answer. When you have done so, please print or save your answers to help you in the session. You don't need to hand them over to me.

In the final part of the session we will reflect on the so-called "Special Employment Centers" in Spain, their operation, the fundamental role that operations can play in their development and their social impact.

*DM: Bugadería (DO1-017-M)*

*NT: Process Fundamentals (HBS 606-S36)*

## **SESSIONS 4 - 5**

In these two sessions, we will define some key concepts in process management and introduce the "lean" philosophy and its application in operations management.

To introduce the lean philosophy, we will do a "simulation" in class using the Lego game, and then we will develop the main concepts and tools of lean management in a colloquium conference. After the session, I will post the document that we will use in class for it.

*NT: Waste in industry: characterization and programs to eliminate them (DO2-126)*

## **SESSION 6**

In this session we will see a real practical case of Lean Management implementation and we will discuss what is the ideal "process" to implement it in an organization and achieve its transformation and how it is necessary to evolve in the future to integrate this transformation with the new technologies associated with it. Industry 4.0 concept.

*CP: Royo Group: challenges of lean management in the industry 4.0 environment (DO1-158)*

## **SESSION 7**

In this session we will work on two topics. On the one hand, we will introduce the main differential elements of operations in service companies and, on the other hand, since the case allows it, we will analyze how IKEA has approached the elimination of "mudas" (waste) from the main processes associated with the operations of its stores, counting on the client as an active "protagonist" in our processes.

*DM: IKEA Lean Service (DO1-101-M)*

*NT: Capacity management in services (DO2-112)*

## **SESSION 8**

In this session we will see the basic concepts about Quality Management. We will

Questions such as: What defines customer satisfaction? How do I get the organization to focus on this satisfaction? We will review the following concepts:

- Historical evolution of the concept of quality.
- Impact and components of Total Quality.
- Competitive dimensions of quality.
- The quality standards / models: ISO 9000/2015, EFQM, JUSE, Baldrige, etc.
- CSR as an evolution of quality policies. and we

will contextualize them with respect to lean philosophy.

*CP: The dabbawala system: deliveries on time always (HBS 612-S03)*

## SESSION 9

In this session we will basically see the concept of Kaizen, of continuous improvement, as a key to the effective implementation of "lean" in organizations.

*CP: J. RUTZ Development of a strategic model for continuous improvement in the service industry. (DO1-156)*

Students must do group work consisting of identifying a case in their environment a specific model of implementation of continuous improvement and study it, comparing it with the model presented in the case J. Rutz. From this comparison, they should draw the relevant conclusions to help the protagonist of the case to build an optimal model of continuous improvement for any company. The work must be sent to the teacher a week before the session, together with the names of the members of the group that are going to present, in case the group is selected for it. The teacher will choose from all the papers presented, 3 that he considers that, with their presentation, they allow to open the debate in the best possible way (not necessarily the best ones). These three works will be presented in the session (5 minutes per group) to start the discussion.

## SESSION 10

In this session we will introduce you to comprehensive logistics and operations planning

- Stocks: Purposes, types and costs of inventories, stock policies, trade-offs: service levels and safety stocks, models to determine the size of purchase and manufacturing lots, impact of inventories on competitiveness and on the cost effectiveness.
- Management of material flows: Design and planning of flows and logistics processes
- Decision making and control of material flows
- Definition of the main elements of the logistics chain management: independent demand and dependent demand,
- Demand forecast
- Aggregate planning
- Materials and capacity planning
- Decision making about the resources to have to meet the demand.

*CP: General Hospital (B) Towards a comprehensive management of the supply chain. (DO1-007-B)*  
*NT: Concept and functions of integrated logistics (DO2-002)*

## **SESSION 11**

In this session we will introduce the concept of the supply chain through the beer game and a later conference:

- The bullwhip effect
- Timing and transparency in supply chain information
- Postponement and mass customization

*DM: IE Supply Chain Simulation (DO1-152-IM)*

## **SESSION 12**

In this session we will see the concepts of Supply Chain Management applied through the case "Fresco y de Mar", a company dedicated to the sale of fresh online fish and seafood. In the session we will have the presence of Joaquín Álvarez, the CEO of the company and our former student (EMBA-2012).

What does globalization mean for operations? - Coordination and integration in the supply chain.

- The "end to end" supply chain
- Push vs. Pull in the management of the supply chain. Impact on business processes
- Integration strategies for management processes and information flows in the supply chain.  
The role of information technologies in the management of the Supply Chain
- The impact of the Supply Chain on the social and environmental environment. Fundamentals of sustainability management from a global perspective. The integration

*NT: The paradigm of competition between networks and Supply Chain Management (SCM): concept and model (DO2-009)*

*CP: The Supply Chain of "Fresco y del Mar" (in preparation)*

## **SESSION 13**

Industry 4.0 and the digital transformation in the Supply Chain.

- Main challenges in Supply Chain management
- Actual state of technologies associated with Industry 4.0 and digital transformation: Realities, short and medium term prospects
- Impact of digital transformation in the Supply Chain

## **SESSION 14**

Innovation Management. How to create greater added value for my clients through technological innovation?

This session will be a bit special. In the first part, we will visit the 3M Spain Innovation Center.

Starting at 4:50 pm, we will hold a conference - colloquium with the company's R&D management, with which we will have the opportunity to learn first-hand about 3M's Innovation model at a global level.

The materials scheduled for this session are "advisory / informative" and you can find some of them in the documentation folder, since there is no specific case to solve. They are programmed so that their reading allows you to reflect and help you to be more participative in the conference-colloquium with the 3M R&D Department.

*AI: What is disruptive innovation? (HBR R1512B)*

## **SESSION 15**

How to achieve excellence in operations in the 21st century.

In this session we will comment on the work developed by each group and discuss how to achieve excellence in Supply Chain operations.

## **ADDITIONAL DOCUMENTATION AND DELIVERABLES**

In the folder corresponding to the introduction to the subject program, you will first find a document that introduces you to the subject program and explains in detail the "deliverables", which are basically 3:

**First** It is a comparative report between the continuous improvement model of a company that you must select and that of the case of session 9, which is that of the Nertus company (The case is called J. Rutz).

Although it is already explained in the text that accompanies session 9, I introduce it at the beginning so that you have more time to prepare it. In this session, 9th, we will work with the concept of Continuous Improvement, using a case that describes an example of how it was implemented in a company that is dedicated to railway maintenance. The case itself describes a "particular" model and, to make the discussion richer, I want to ask you, by groups, from the very beginning of the program (before even if you consider it appropriate) to look for another real example in your environment that you can analyze and compare with the J. Rutz case.

The example can be of a successful model that you know or quite the opposite, an example of a resounding failure. The final goal (I know it is very ambitious) is that from the comparison of both examples, we can draw some conclusions that allow us to define an optimal model for the implementation of Continuous Improvement in any organization.

Before, in sessions 4, 5, 6, 7 and 8 we will introduce the topic of continuous improvement in the framework of "lean management" and that will allow you to identify some of its keys, but I think it is better that by then, you have already been able to select the example that you are going to analyze and, even, that you have already been able to gather enough information to start developing the work.

This is probably a topic that many of you already know, but, in any case, if any of the groups is interested in commenting on it before the first face-to-face session we have, please send me an e-mail

and we will find the day and time to do it by video conference. This work will count for the final grade. In the corresponding section, it is explained in detail how to evaluate it and its relative weight

**The second Deliverable** is a report on the final work of the subject. Also in a group, you will have to do a job that consists of:

- On the one hand, identify a process or set of processes in a company in your environment (it can be industrial, but also services or business), analyze its performance and identify any area for improvement that can be influenced by applying any of the technologies associated with Industry 4.0 (or a combination of them)
- On the other, you have to select the technological bases associated with the concept of Operations 4.0 what are you going to apply (In the documentation section, in the folder for session 15, you will find 5 folders, one per technological base, with information, documents and videos to help you):

- > **IoT (Internet of Things),**
- > **Additive manufacturing / 3D Printing,**
- > **Big data / Data analysis,**
- > **Artificial intelligence and augmented reality**
- > **Automation and robotization**

You will have to find a way to apply one of these technological bases (or a combination of them) to the selected process, explaining how they would add value. You must prepare a report in pptx of 12-15 pages, cover, index and separate annexes (if you need them):

- The first 3 pages, explaining the company, the selected process / s (arguing why) and identifying which are the indicators that will serve to monitor the process.
- 2-3 pages with the analysis of the process, identifying its main areas for improvement and which of them you have chosen to address.
- 3-4 pages explaining the technological base / s on which you are going to work to try to improve the process and how you are going to apply them
- 2-3 pages explaining what are the results you hope to obtain (the added value of the project), working with the indicators that you have defined at the beginning and evaluating the impact of its evolution on the financial statements of the company.
- 2 final pages on what the impact on the organization of the implementation of the improvements may be (beyond the indicators) and if you think that complementary measures must be taken so that their implementation can be effective.

**The third deliverable** is an individual report on one of the following cases that we will see in a session, to be chosen by each of you: Royo Group (Session 6), Ikea (Session 7), Dabbawala (Session 8), General Hospital (B ) (session 10), Fresco y del Mar (session 12). The report will consist of answering three specific questions about the case that I will post in the corresponding folder and will have a maximum length of one and a half faces in word. At that very moment, I will indicate the precise instructions for its preparation.

## EVALUATION SYSTEM

The evaluation will consist of four sections: class participation, evaluation of group work on continuous improvement, evaluation of final group work on "Improving processes through digital transformation" and, finally, the individual report on a practical case that you will choose from the following: Royo

Group, IKEA, Dabbawala, General Hospital (B) and Fresco y del Mar ". The relative weights will be the following:

Criterion	Percentage	Comments
Individual Class Participation	30%	The quality of the contributions will be valued above all
Group work: Continuous improvement	20%	All groups will give it to the teacher at the end of session 8
Group work: Operations 4.0	20%	All groups will deliver it to the teacher 48 hours before the day of the final session (15)
Individual work: Case analysis	30%	On an individual basis, each student will select a case from those proposed and will analyze it and deliver it to the teacher before the corresponding session

**CLASS PARTICIPATION**, the teacher will give each student an evaluation in each session. To assign this evaluation the teacher will take into account both the quantity and the quality of the entries. The final result of this section will be the average of all the evaluations.

**GROUP WORK - CONTINUOUS IMPROVEMENT:** It must be delivered at the beginning of session 8 and the grade will be the result of:

- 70% Content: analysis carried out and the proposed model. In turn, this section will be the function of: 20% contribution of valuable information regarding the experience analyzed 30% depth in the comparative analysis carried out 50% "quality" of the proposed model
- 30% The report. 20% Report structure 30% Report clarity 50% Global creativity.

**FINAL GROUP WORK ON PROCESS IMPROVEMENT:** It will also be valued based on both sections:

- 70% content
- 30% the report and its presentation, in both cases with an equivalent breakdown similar to the previous one.

**INDIVIDUAL WORK:** Each student will select one of the assigned cases and will answer the questions that will be posted in the corresponding folder for this purpose. Students must deliver the said report, before 12 pm the day before the start of the session in which the case will be discussed.

## GENERAL INSTRUCTIONS

The reading material for each class (technical notes and case studies) mentioned in the program should be analyzed before each class.



Additionally, for those who wish, specific references will be provided for delve into the different topics: books, magazine articles, websites etc. Any material not explicitly included in "Reading Material" that is provided is optional and will not be evaluated.

The slides used in class will be posted on the online Campus after each session.

Class participation is vital, but it must be understood as effective participation that adds value to the construction of knowledge and skills. Repetitive, unnecessarily long, or out of context entries should be avoided.

## **FAIL AND THE EXTRAORDINARY EXAM**

If the student receives a failure - Fail - in the subject, they will have the opportunity to appear for an Extraordinary Call in order to achieve enough credits to graduate.

The extraordinary test will take place between 5 and 10 business days after the date of the review session.

The result of this extraordinary test will be limited to Low Pass or Fail.

Both grades, the Fail of the subject, as well as the grade obtained in the extraordinary test, will appear on the student's transcript. For the calculation of the GPA, however, only the qualification of the extraordinary test will be taken into account. Those students who are evaluated with Fail in the extraordinary test of a subject will not be able to continue in the program.