

AD017 Principles of Operations

Course Contents

DESCRIPTION This course emphasizes the strategic, tactical, and operational planning aspects of operations management. By reviewing the concepts and analytic methods that are useful in understanding the management of a firm's operations., providing an overview of Operations Management and Supply Chain Management. By focusing on the core processes of a firm, with a special interest on where value is added in the organizational processes. We will dig into different roles inside the supply chain taking special interest on fighting against variability.

Our aim is to familiarize students with the problems and issues confronting operations managers, and provide them, with language, concepts, insights and tools to deal with these issues in order to gain competitive advantage through operations.

OBJECTIVES The objectives of this course are to:

- To learn basic concepts of operations, inventory and distribution management both theoretical and using them using practical examples.
- To identify how operation's better efficiency is a key driver to financial results improvement.

Methodology

The course will consist of a combination of lectures, assignments, case studies, simulations, role play games and analytic exercises.

Readings

MAIN READINGS:

- **The Goal:** Eliyahu M. Goldratt.
- **Production & Inventory Management:** Fogarty, Blackstone, Hoffman, APICS South West

Support Readings:

- **APICS Dictionary** – 2008 Release
- **Logistics and supply chain management: creating value-adding networks** - Martin Christopher – 2005
- **OPERATIONS MANAGEMENT** (9th Edition), William J Stevenson. McGraw-Hill/Irwin / ISBN: 9780073290942
- **OPERATIONS & SUPPLY MANAGEMENT** (12th edition), Chase, Richard B.; Jacobs, F. Robert & Aquilano, Nicholas J. / McGraw-Hill/Irwin / ISBN: 9701044681

Learning Outcomes

- To describe service and production systems

- To discuss the role of OM in a wide variety of organizations, as for the relation with other key internal departments.
- Use several quantitative techniques to solve several operational problems: ABC classification, MRP. Safety stock, EOQ, etc

Competences

- Critical Thinking.
- Basic theoretical knowledge of the subject.
- Development of written and oral communication skills.
- Development of operations management skills.
- Problem-solving skills.
- Teamwork.
- Persistence
- Intrapersonal knowledge and development.
- Interpersonal skills.
- Cross-cultural skills.
- Creativity.
- A search for quality excellence.
- Self Motivation.
- Generative learning.

Continuous Assessment

REQUIREMENTS, EXPECTATIONS, AND ASSESSMENT

Paraphrasing Mr. Bill Shankly: "They say Operations' is a matter of life and death - but it's more important than that"

Yes, Operations are more important than you think, I take it very seriously, and I do expect the same from you. In order to have a 100% understanding in both ways, please take note:

- **Attend class.**
It is imperative that you are here. You CANNOT miss classes. This course is only effective if everyone participates actively.
If you have more than three absences for the semester, be prepared to earn a failing final grade for the course.

You CANNOT miss class when you are scheduled to give a presentation, handle exercises or to take an exam (I will handle special situations if necessary).
- **Be punctual.**
Come to class ON TIME. No excuses are allowed. Late arrivals disrupt the flow of the class. In addition, tardiness at work would not be tolerated. Anyone who arrives 5 minutes later than the starting of the session won't be allowed to enter the class.
- **Participate.**
Class participation is a must for the grade. Therefore, it is important that students come to class with the readings, exercises, activities or other stuff prepared, willing to interact and discuss them meaningfully. Some stuff will be based on home prepared materials and other stuff on brainstorming and in class activities. You will be assessed on the quality of your comments, the feedback provided to your colleagues and the way you do it.
- **Be prepared for every class.**

I expect you to come to class with the readings, take-home exercises, activities and assignments prepared in advance of the class devoted to them.

- **Meet deadlines.**

Meet due dates. This is the policy for ALL assignments, exercises, presentations, activities. Late stuff submissions are not accepted. For every piece of work not submitted when scheduled (oral presentations, in class exercises and activities, take home exercises and activities and the final exam) you will receive 0 points.

- **Demonstrate academic integrity in all of your work.**

If you are caught cheating in any form on exams, plagiarizing or rehashing in exercises, activities, assignments, presentations or handing in work you did not do, be prepared to receive a failing final grade for the course.

Be sure your work is your own. You are responsible for citing all sources on which you rely, using quotation marks when language is taken directly from others' work, and knowing how to use your own language to paraphrase a source (hint: changing a few words is not sufficient). If you cite a direct quote, you must provide a reference with a page number for the citation. Remember, we teachers have a unbelievably software which can find ANY copy & paste coming from the whole Internet at the same time comparing with the documents of your fellow students in this and previous years.

- **Technology issues.**

Cell-phones, Smartphones, Tablets, Ipad, Ipods or any other similar new devices are off limits during class. Please, turn them off. If you need to check the time, your professor will inform you when it is the time to finish the class.

If you have an emergency situation that requires you to be contacted quickly during class time, let your professor know at the beginning of class and an exception may be made if the professor considers so.

Laptops, Netbooks, Notebooks, Powerbooks, or any other similar new device. They are not allowed to take notes. If you want to do so, bring a pen and a piece of paper. Anyway, on some occasions (some class assignments) will be allowed under the professor's permission. But bear in mind that in case the professor has the feeling they are used for other purposes; they will be strongly forbidden and the student will have to leave the class. That will mean an absence.

Note: Standard calculators are welcome.

- **In case of repeating the course**

Students should Attend the course and follow the regular course policy.

EVALUATION

The Course grade will be based on the following point breakdown:

1. 10% Active assistance: This grade is based on the participation of the students at class as well as their continuous attendance. Teamwork competence on simulation games will also be taken on consideration.
2. 40% Individual grade based on Mid term exam (Multiple choice test 60/40 theory /problems)

3. 20% Individual grade based on Final exam (Multiple choice test 60/40 theory /problems)
4. 30% Group and Individual grade based on Assignments, Take-home & in class exercises, Take-home & in class activities, Readings, Visits report, Presentations, etc
 - Performance in task completion (delivering on time, effectiveness, efficiency).
 - Quality of final deliverable (rigor of methodology, validity of results, accuracy of analysis, synthesis in conclusions, appropriateness of recommendations, on time delivery, ability to communicate key messages in a formal oral presentation).
 - Teamwork (ability to work effectively and efficiently as a team throughout the process)

Prerequisite to perform the maths to obtain the final grade is to have a minimum of 3,5/10 on the exams and a minimum of 5/10 in the other parts.

- **Exams policy**

1. You will attend with following equipment and this equipment only:

- Pen -not pencil- black or blue color
- Standard non-programmable calculators.

Any other equipment will be supplied by the teacher

Any attempt of cheating will be punished as if it would have succeed, be prepared to earn a failing final grade for the course.

2. It will a 15 minutes period to take individual questions about the exam. Once this time elapsed no questions will be allowed.

3. There won't be WC breaks, procure to have all your business complete prior to the exam.

- **Revision Date**

Approximately two weeks after each exam you can ask for revision, Please consider that this one could be both ways, up and down.

Agenda Sessions and Course Syllabus

Session	Objectives and Topics by Session
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1	Objective: Introduction
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Course and teacher presentation, and a general overview of Operations and Supply Chain .

2-6	Objective: Give an overview of Operations Basics
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Environment, complexity. Need to cooperate. Polling game.

Identify Key factors and competitive strategies

Variability, our enemy, Market evolution. Stock as a hidden cost. Operation efficiency at any place.

A look on SC evolution, differences between Linear and organic Supply Chains. A first look into Inventory ratios. The triple A Supply Chain, searching for excellence.

SC complexity and a look on different SC evolution ways. Zara case pre-discussion

- 7 **Objective:** Operations Basics: Fast fashion. Group role play
- Back on 2001, 3 student teams will try to convince the instructor and their shareholders (the other 2 teams) to invest a huge amount on one of these tree companies using the information they have. A deep look into their operations is recommended to take some interesting conclusions. (Individual Assignment)
- Back to 2009, we'll see what really happened. Supply Chain and Production strategies will be evaluated..
- 8-10 **Objective:** Describe the components of the physical Network
- Equipments, facilities, plants, warehouses, distribution centers, cross-dock.
- Transport: Air (plane), sea (ship), land (truck or train).
- Assignment:** Report about performed visits.
- 11-13 **Objective:** Give an overview of the Planning And Forecasting processes
- Demand Modeling
- Demand Planning
- Stock and Service Level Planning
- Distribution requirement Planning
- New relations between customers and suppliers: VMI, CRP, CFPR
- Assignment:** Exercises based on the examples saw during sessions
- 14-16 **Objective:** Give an overview of the Inventory Management and understand the importance of the inventory in the SCM.
- Inventory Management Definition
- Inventory Management Terms
- Inventory Management Purposes
- Definition and Objectives for Inventory Management
- Organizational Hierarchy of Inventory Management
- Inventory Management Planning
- Inventory Management Controls for Inventory
- Determining Inventory Management Stock Levels
- Assignment:** Exercises based on the examples saw during sessions
- 17-21 **Objective:** Give an overview of the Manufacturing process and understand which are the different manufacturing strategies.
- Manufacturing Strategies
- Production Planning (JIT, MRP, ...)
- Production Execution

Assignment: MRP Exercise

22-23 **Objective:** Match the SCM processes with the Information Technology Systems

ERP, APS, B2C, B2B, EDI, ...

Assignment: Electronic Worldwide Distribution Case Study

24 **Objective:** Give an Overview of the Services Operations

Introduction to Services

Services Strategy

Productive Systems

Service Design

Assignment: Benihana of Tokyo

25 **Special Assignment:** To be defined

This outline could be changed anytime due to teaching reasons

Observations

CONTACT INFORMATION

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ABOUT THE PROFESSOR

Just Piferrer obtained his Engineering Degree from Universitat Politècnica de Catalunya, in the field of Industrial Electronics. He also holds a Master in International Business and Executive Education on IESE – Universidad de Navarra, He was into several industries such as Electronics (Sony, Hitachi, Airwell) as well as pharmaceuticals (Almirall) and consultancy (ALTRAN, Next) in charge of corporate IT Outsourcing & Services including Applications Maintenance, Business Consultant, Supply Chain Manager and responsible for an ERP international project. He also teaches in Universitat Autònoma de Barcelona. Recently has been appointed as a Chief Operations Officer of a new high tech company based in Barcelona.