Licenciatura em Gestão
Production and Operations Management
Spring Semester 2014/2015

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Objectives:

- To provide a framework to analyze production and operational issues within organizations;
- To provide a working understanding of the fundamental concepts, models, techniques, and methodologies aiming at identifying, diagnosing, and solving problems within organizations mainly those business-oriented.

Support material:

Recommended Book: Heizer, J., Render, B. (2014). *Operations Management*, Global Edition, 11/E, Prentice Hall.

The course webpage will be used to disseminate information concerning the course, namely the PowerPoint slides for the lectures and the exercise books to be solved in-class.

Additional bibliography:

Slack, N., Chambers, S., & Johnston, R. (2010). *Operations Management*, Sixth edition, Prentice Hall.

Course description:

Production and Operations Management is a compulsory course of the Bologna first cycle management study program. Lectures are based on theoretical concepts followed by problems solving whenever appropriated. Students may be requested by the instructor to individually solve problems. The instructor will direct students to peruse the text chapters that complement the lecture.

It is the students' responsibility to comply with the instructors' recommendations in the course. It is expected that the student will observe a methodical study discipline as the means to progressively consolidate and solidify knowledge. Main topics are described on the table below. Numbers in parenthesis refer to the textbook chapters:

1 PRODUCTION AND OPERATIONS MANAGEMENT (1, 2)
- 1.1 What is Operations Management?
- 1.2 Organize to produce goods and services
- 1.3 Critical decisions in OM
- 1.4 Differences between products and services
- 1.5 Achieving competitive advantages through operations
- 1.6 Strategic OM decisions
- 1.7 Strategic development and implementation

2 PROJECT MANAGEMENT (3)
- 2.1 Project definition
- 2.2 PERT
- 2.3 CPM
- 2.4 Cost issues

3 INVENTORY MANAGEMENT (12)
- 3.1 Types of inventory
- 3.2 ABC analysis
- 3.3 EOQ model
- 3.4 EPQ model
- 3.5 Quantity discount
- 3.6 Safety stock
- 3.7 Single Period Models

4 AGGREGATE PLANNING (13)
- 4.1 Aggregate planning
- 4.2 Capacity and demand options
- 4.3 Chase and level strategies
- 4.4 Transportation method

5 WAITING LINE MODELS (Module D)
- 5.1 Arrival, departures and service characteristics
- 5.2 Performance measures
- 5.3 Waiting line costs
- 5.4 M/M/1
- 5.5 M/M/S
- 5.6 M/D/1
- 5.7 M/G/1
- 5.8 G/G/1 and G/G/S
- 5.9 Finite population models

6 SCHEDULING (15)

6.1 Scheduling n/1
6.2 Johnson's rule
6.3 Assignment method

7 MAINTENANCE (17)

7.1 Strategic relevance of maintenance
7.2 Maintenance types
7.3 Reliability and redundancy
7.4 MTBF and MTTR
7.5 Total Productive Maintenance

8 PROCESS STRATEGY (7)

8.1 Process strategies
8.2 Flow diagrams

Course Assessment:

Student evaluation is defined by School Regulations. The reading of the regulations is strongly advised.

The course evaluation consists of a final exam covering all topics, weighting **70% of the final grade**, and of two in-class quizzes, with a joint weight of **30%**. **The first quiz will take place during the April 13 – 17 week. The second quiz will be conducted on the May 18 – 22 week.**

The continuous evaluation will only be considered if it benefits the student's final grade. Students must, however, have a **minimum grade of 9 out of 20 values in the final exam** for the continuous evaluation to be considered. The continuous evaluation will only be considered in two periods of examination (first exam and second exam). In the case of the special exam and grade improvements the final grade will be equal to that of the final exam.

For students who miss the quizzes, the final exam will be weighted 100%.

All the evaluations (final exam and quizzes) are conducted without consultation of study materials. Additional information such as statistical tables or formulae will be supplied along with the exam questions. Students must bring their own calculator to the final exam and quizzes. Usage of any other electronic device with computational capabilities, such as cellular phones, is forbidden. Sharing of calculators among students during the final exam will not be tolerated.