

## **PRODUCTION AND OPERATIONS MANAGEMENT**

Degree(s)	: Management
Type	: Compulsory course unit
Curricular year/semester	: 3rd year / 2nd Semester
ECTS / hours per week	: 6 ECTS / 4.0 Hours
Workload per Week	: 2Theoretical/Practical x 2Hours
Teacher responsible	: Professor Graça Maria de Oliveira Miranda Silva

### **OBJECTIVES**

- To provide a framework to perspective production and operations as well as organizational 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 businesses oriented.

### **PROGRAM**

- 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 PROCESS STRATEGY (7)**
  - 3.1 Process strategies
  - 3.2 Flow diagrams
- 4 LAYOUT (9)**
  - 4.1 Strategic importance of layout decisions
  - 4.2 Types of layouts
  - 4.3 Advantages and disadvantages of the various types of layouts
- 5 INVENTORY MANAGEMENT (12)**
  - 5.1 Types of inventory
  - 5.2 ABC analysis
  - 5.3 EOQ model
  - 5.4 EPQ model
  - 5.5 Quantity discount
  - 5.6 Safety stock
- 6 AGGREGATE PLANNING (13)**
  - 6.1 Aggregate planning
  - 6.2 Capacity and demand options
  - 6.3 Chase and level strategies
  - 6.4 Transportation method
- 7 SCHEDULING (15)**
  - 7.1 Scheduling n/1
  - 7.2 Johnson's rule
  - 7.3 Assignment method
  - 7.4 Assembly line balancing
  - 7.5 Cyclical scheduling
- 8 MAINTENANCE (17)**
  - 8.1 Strategic relevance of maintenance

- 8.2 Maintenance types
- 8.3 Reliability and redundancy
- 8.4 MTBF and MTTR

## 9 WAITING LINE MODELS (Module D)

- 9.1 Arrival, departures and service characteristics
- 9.2 Performance measures

- 9.3 Waiting line costs
- 9.4 M/M/1
- 9.5 M/M/S
- 9.6 M/D/1
- 9.7 M/G/1
- 9.8 G/G/1 and G/G/S

## BIBLIOGRAPHY

### Recommended Bibliography:

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

### Optional Bibliography:

- De Wit, Meyer, *Strategy? Process, Content, Context* (4th Ed.) , Southwestern, 2010
- Wheelen, Hunger, *Strategic Management and Business Policy* (11th Ed.), Pearson, 2008
- Robalo Santos, *Gestão Estratégica? Conceitos, modelos e instrumentos*, Escolar, 2008