

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	: 2 Theoretical / Practical x 2 Hours
Teacher responsible	: Professor Graça Maria de Oliveira Miranda Silva

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.

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 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

BIBLIOGRAPHY

Recommended Bibliography:

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

Optional Bibliography:

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