



<b>Course Code</b> ENMA-505 (MABN-670)	<b>Course Title</b> Operations & Quality Management	<b>ECTS Credits</b> 7.5
<b>Prerequisites</b> None	<b>Department</b> Management & MIS	<b>Semester</b> Fall, Spring, Summer
<b>Type of Course</b> Core	<b>Field</b> Engineering Management	<b>Language of Instruction</b> English
<b>Level of Course</b> 2 <sup>nd</sup> Cycle	<b>Lecturer(s)</b> Dr Neophytos Karamanos	<b>Year of Study</b> 1 <sup>st</sup>
<b>Mode of Delivery</b> Face to Face	<b>Work Placement</b> N/A	<b>Co-requisites</b> None

## Objectives of the Course:

The main objectives of the course are to:

- Explain the strategic role of operations management in organizations
- Understand how to design operation systems to support the strategy of the organization and gain a competitive advantage in the marketplace
- Understand the importance of designing and managing effectively the organization's supply network
- Understand the role and key decisions of the operations manager (forecasting demand, capacity management, inventory management, scheduling etc.)
- Understand the implications of managing effectively quality and performance in organizations
- Gain appreciation of the need for continuous improvement and the methodologies for effecting change (students should be able to understand the reasons necessitating change in operations and how to effect such change through both projects and continuous improvement)

## Learning Outcomes:

After completion of the course students are expected to be able to:

1. **Assess the role of operations in an organization** (students should be able to discuss and explain the key role of operations in an organization and the various existing interactions with other organization departments)
2. **Formulate a suitable operations strategy to support the overall organization strategy** (using a specific methodology worked in class the students should be able to express the strategy pursued by an organization into specific operation performance objectives)
3. **Design an operations system to support a specific operation strategy** (students should be able to design the various elements of an operations system such as process design, supply network, location of facilities, layout, technology, job design, lean philosophy etc.)

4. **Assess the key processes involved in operations planning and control** (students should be able to assess the various options available and select the most appropriate ones in order to support a given operation strategy; students should also be able to explain the rationale behind the key decisions of the operations manager)
5. **Analyze an operation, identify its strengths and weaknesses and propose an improvement project to overcome its main weaknesses** (students should be able to apply the main concepts of the course on real operation cases)

### Course Contents:

#### **1.0 Introduction to Operations Management**

- 1.1 Operations as processes
- 1.2 Operation process characteristics
- 1.3 The model of operations management
- 1.4 The strategic role of operations

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapters 1 and 2  
Case studies: Prêt a Manger, Two very different hotels

#### **2.0 Operations Objectives and Strategy**

- 2.1 Operations performance objectives
- 2.2 The four perspectives on operations strategy
- 2.3 Methodology of operation strategy formulation
- 2.4 Balancing conflicting operation objectives

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapters 2 and 3  
Case studies: Two very different hotels, Ryanair

#### **3.0 Process Design**

- 3.1 Elements of process design
- 3.2 Process types
- 3.3 Process mapping

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapter 4  
Case studies: Dell

#### **4.0 Supply Network Design and Location**

- 4.1 Supply network design
- 4.2 Vertical integration
- 4.3 Outsourcing
- 4.4 Location of facilities

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapter 6  
Case studies: Dell, Disneyland Paris

#### **5.0 Process Layout and Technology**

- 5.1 Layout Types
- 5.2 Materials-processing technology
- 5.3 Information-processing technology
- 5.4 Customer-processing technology

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapters 7 and 8.  
M. E. Porter, "Strategy and the Internet", HBR, March 2001  
Case studies: YO! Sushi, QB House

#### **6.0 Job Design and Planning and Control**

- 6.1 Ergonomics

- 6.2 Division of labor
- 6.3 Designing for job commitment
- 6.4 Nature of planning and control
- 6.5 The activities of planning and control

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapters 9 and 10.

Case studies: McDonald's lets families share job, BA at Waterside, The hospital triage system

### **7.0 Capacity Planning & Control**

- 7.1 Measuring capacity
- 7.2 Forecasting demand
- 7.3 Approaches to capacity planning and control

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapter 11.

Case studies: Seasonal salads

### **8.0 Inventory & Supply Chain Planning & Control**

- 8.1 Definition and use of inventories
- 8.2 How much to order?
- 8.3 When to place an order?
- 8.4 Inventory analysis & control systems
- 8.5 Supply chain management activities
- 8.6 Supply chain relationships
- 8.7 Supply chain dynamics

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapters 12 and 13.

Case studies: Manor bakeries, Seven-eleven Japan's agile supply chain

### **9.0 Enterprise Resource Planning & Lean Operations**

- 9.1 Materials requirements planning (MRP)
- 9.2 Manufacturing resource planning
- 9.3 Enterprise resource planning
- 9.4 The lean philosophy
- 9.5 JIT techniques
- 9.6 JIT & MRP

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapters 14 and 15.

Case studies: The lean attack on waste overcomes high labor costs, Running hot

### **10.0 Quality Planning & Control**

- 10.1 Definition of Quality
- 10.2 Conformance to specification
- 10.3 Statistical process control (SPC)
- 10.4 Process variation
- 10.5 Acceptance sampling

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapter 17.

Case studies: Quality at Torres Wine, Process control at Walkers

### **11.0 Performance Measurement and Operations Improvement**

- 11.1 Measuring and improving performance
- 11.2 Improvement priorities
- 11.3 Approaches to improvement
- 11.4 Techniques of improvement

References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapter 18.

Case studies: Six Sigma at Xchanging

### **12.0 Project Planning and Control**

- 12.1 Understanding the project environment
- 12.2 Project definition

12.3 Project planning 12.4 Project control 12.5 Real-life feedback References: N. Slack, S. Chambers, R. Johnston, Operations Management, Chapter 16. Case studies: The London Marathon
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**Learning Activities and Teaching Methods:**

Lectures, Case Study Analysis and Discussion, In Class Exercises and Presentations
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**Assessment Methods:**

Attendance and Participation, Midterm Exam, Assignment, Final Exam
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**Required Textbooks / Reading:**

Title	Author(s)	Publisher	Year	ISBN
Operation Management 8 <sup>th</sup> Ed.	Slack, N., Brandon-Jones A., S., Johnson, R.	Pearson	2016	9781292098678

**Recommended Textbooks / Reading:**

Title	Author(s)	Publisher	Year	ISBN
Wright, N., Race, P	The Management of Service Operations 2 <sup>nd</sup> Ed.	Homson	2004	1-84480-051-2
Dale, B., Van der Wiele, T, Bamford, D.	Managing Quality (*) 6 <sup>th</sup> Ed.	John Wiley & Sons	2016	9781119130925

(\*) Available at:  
<http://site.ebrary.com/lib/unicosia/detail.action?docID=10788035&p00=managing+quality>