



**UNIVERSITÉ  
DE NAMUR**

FACULTÉ  
DES SCIENCES ÉCONOMIQUES,  
SOCIALES ET DE GESTION

## **Operations Management and Business Logistics (EINGB333)**

**Academic Year:** 2014-15

**Instructor:** Aadhaar Chaturvedi

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**Credits:** 3 ECTS

### **Learning Goals**

#### Effective Oral Communication

Each student shall be able to communicate verbally in an organized, clear, and persuasive manner, and be a responsive listener. Assessment: class participation

#### Critical and Integrative Thinking

Each student shall be able to identify key issues in a business setting, develop a perspective that is supported with relevant information and integrative thinking, to draw and assess conclusions. Assessment: class participation, case reports, final exam

### **Course Description:**

This course provides a general introduction to operations and supply chain management. Operations Management studies the process by which inputs of materials, labor, capital and information are transformed into products and services which the consumers are willing to pay for. These processes can be managed well or poorly. Knowledge introduced in this course will help you understand the reasons for both. Supply Chain Management is primarily concerned with the efficient integration of suppliers, factories, warehouses and stores so that merchandise is produced and distributed in the right quantities, to the right locations and at the right time, and so as to minimize total system cost subject to service requirements. This course will introduce you with the tools used in planning and coordinating a supply chain.



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The main objective of this course is to introduce tools and techniques that are needed to understand operations and supply chain processes and to provide students with the ability to analyze and continuously improve these processes.

**Reference Textbook:**

Operations and Supply Chain Management, 13<sup>th</sup> edition, by F. Robert Jacobs and Richard B. Chase

**Session-Wise Topics:**

1. Introduction to Operations Management: Objective and challenges in Operations Management. Introduction to manufacturing processes
2. Basics of Process Flows: Bottleneck analysis, capacity planning.
3. Little's law and inventory build-up: Application of little's law and inventory build-up diagrams
4. Capacity analysis: Cost of waiting and determining capacity of processes.
5. Process flow with variability: Benefits of pooling resources
6. Poisson processes: Analyzing random arrivals
7. Introduction to Queueing Theory
8. Waiting time analysis
9. Application of Queueing theory: Cost of waiting with random arrivals and service times
10. Project planning: Critical Path Method
11. Application of Project planning tools
12. Demand forecasting: Time series and causal models of demand forecasting



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13. Mid-term review
14. Inventory management: Introduction to inventory management and economic order quantity model
15. Application of EOQ model
16. Safety-stock: Fixed order quantity and periodic review inventory models
17. Newsvendor model: Introduction and application of newsvendor's model
18. Beergame (simulation): Order fluctuations in supply chains
19. Bullwhip effect: Cause of order fluctuations in supply chains
20. Disruption risk management in supply chains
21. Total quality management: Six-sigma quality and statistical quality control
22. Lean operations: Toyota production system
23. Linear programming: Review of linear programming
24. Application of L.P. in resource allocation
25. Final review: Question and answers
26. Mock exam

**Course Material:** Course pack is available before the course

### **Homework**

A total of 7 assignments will be handed out at the end of sessions 1,3,4,8,10,14,19. The questions for each homework will be posted online on the course website on Webcampus.

### **Evaluation Components:**



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The course grade will be based on 7 group homework (30%), individual class participation (20%) and an in-class individual final exam (50%).