

# Logistics Engineering and Management

**Lecturer**

Alassane Ballé NDIAYE (Coordinator)

**Course mnemonic**

GEST-H501

**ECTS credits**

5 credits

**Language(s) of instruction**

English

**Course period**

First term

**Campus**

Solbosch

## Course content

This logistics course deals with the engineering and management of the multiple flows in every segment (node or link) of the network consisting of suppliers, manufacturers, distributors, vendors, and customers. The coordination and integration of these flows within and across these network elements are critical and acknowledged as a key to any successful industrial strategy.

As such, this course is dedicated to the fundamental concepts and techniques of logistic processes' optimization, logistics management, quality engineering and quality management systems.

The course focuses particularly on demand and supply forecasting models, logistics network planning and modelling, warehousing and inventory management models, production and manufacturing logistics, logistics distribution & transport systems, reverse logistics, quality engineering and quality management systems. The course closes with a discussion about (1) the challenges of greening logistics operations, and (2) the integration of all of the above towards supply chain management.

## Objectives (and/or specific learning outcomes)

Introduce to the future engineer, the key concepts of logistics operations, logistics optimization, quality engineering and quality management of industrial systems and products while insisting on the underlying principles and assumptions as well as the resulting limitations and practical issues of their application.

## Pre-requisites and co-requisites

### Course having this one as co-requisit

GEST-H502 | Supply Chain Performance Analytics | 5 crédits

## Teaching method and learning activities

- > Semester: First semester of the academic year (Early November to mid-December).
- > Theoretical part: 1 ECTS (3 sessions of 4 hours each).
- > Exercises/Practicals part: 3 ECTS (9 sessions of 4 hours each) comprising exercises, illustrations, workshops with experts.
- > Eventual take-home exercises to be solved or a case to be elaborated (1 ECTS personal work).

## Contribution to the teaching profile

(1) Improve significantly the capacity of the future engineer to understand and formalize logistics operations and quality issues and, (2) equip him with the necessary skills and tools to optimize and manage them.

## References, bibliography and recommended reading

- > Essentials of Logistics and Management, EPFL-Press
- > Introduction to Logistics Systems Planning and Control. G. Ghiani, G. Laporte, R. Musmanno. Editions WILEY
- > Fundamentals of Production Planning and Control. S. Chapman, Edition Pearson Prentice Hall.
- > Management Industriel et Logistique: Conception et pilotage de la Supply Chain. G. Baglin, O. Bruel, et al. Editions Economica.
- > Other books, brochures, papers and case studies will be regularly provided to the students.

## Course notes

Université virtuelle

## Other information

### Place(s) of teaching

Solbosch

### Contact(s)

Professor Alassane B. NDIAYE  
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## Evaluation method(s)

written examination

## Determination of the mark (including the weighting of partial marks)

- > written exam theoretical part (multiple choice and/or open questions): 20%
- > written exam practical part (exercises): 80%

## Main language(s) of evaluation

English

## Programmes

### Programmes proposing this course at the Brussels School of Engineering

MA-IRAR | **Master of science in Architecture and Engineering** | finalité Professional/unit 2, MA-IRBC | **Master in Chemistry and Bio-industries Bioengineering** | finalité Professional/unit 2, MA-IRBE | **Master in Environmental**

**Bioengineering** | finalité Professional/unit 2, MA-IRCB | **Master of science in Biomedical Engineering** | finalité Professional/unit 2, MA-IRCN | **Master of science in Civil Engineering** | finalité Professional/unit 2, MA-IREL | **Master of science in Electrical Engineering** | finalité electronics and information technologies/unit 2, MA-IREM | **Master of science in Electromechanical Engineering** | finalité Professional/unit 2, finalité Operations engineering and management/unit 1 and finalité Operations engineering and management/unit 2, MA-IRIF | **Master of science in Computer Science and Engineering** | finalité Professional/unit 2, MA-IRMA | **Master of Science in Chemical and Materials Engineering** | finalité Professional/unit 2 and MA-IRPH | **Master of science in Physical Engineering** | finalité Professional/unit 2

### Programmes proposing this course at the faculty of Sciences

MA-CHIM | **Master in Chemistry** | finalité Professional/unit 1 and finalité Professional/unit 2, MA-IRBC | **Master in Chemistry and Bio-industries Bioengineering** | finalité Professional/unit 2 and MA-IRBE | **Master in Environmental Bioengineering** | finalité Professional/unit 2