

# Supply Chain Performance Analytics

## Lecturer

Alassane Ballé NDIAYE (Coordinator)

## Course mnemonic

GEST-H502

## ECTS credits

5 credits

## Language(s) of instruction

English

## Course period

Second term

## Campus

Solbosch

## Course content

This course is the continuation of the course GEST-H-501 "Logistics Engineering & Management". It is dedicated to supply chain management. As such, it is built around the SCOR pillars: PLAN (demand and supply), SOURCE (sourcing, procurement), MAKE (production/manufacturing, design of services), STOCK (inventory management), WAREHOUSING (warehouse management), DELIVER (transport & distribution system/network) RETURN (reverse logistics).

The course focuses on INTEGRATION & COORDINATION, e.g., on the advanced strategies for an optimal integration of the different functions of the above SCOR pillars. A great deal is dedicated to supply chain management strategies and to supply chain performance modelling and management.

## Objectives (and/or specific learning outcomes)

Introduce to the future engineer the advanced concepts of supply chain management while insisting on the underlying principles and assumptions as well as the resulting limitations and practical issues of their application. Familiarize the future engineer with the most advanced methodologies/tools and the best practices for the design, implementation and follow up of value creative and sustainable solutions capable of driving supply chain performance to the next level of excellence.

## Pre-requisites and co-requisites

### Co-requisites courses

GEST-H501 | Logistics Engineering and Management | 5 crédits

## Required knowledge and skills

A prior good knowledge of logistics operations and management is recommended.

(The course GEST-H501 "Logistics Engineering & Management" is recommended as a prerequisite.)

## Teaching method and learning activities

SEMESTER: Second semester of the academic year (February to May).

THEORETICAL SESSIONS: 1 ECTS

- > weight 20% of final mark
- > 3 consecutive sessions (4h each)
- > Participation is required, but not formally evaluated.

PRACTICAL SESSIONS: 3 ECTS in class + 1 ECTS personal work.

- weight 80% of final mark
- Business Case Development (real-life business case to be elaborated in groups of students)
- 9 consecutive sessions (4h each) comprising exercises, illustrations, workshops with industrial experts, coaching and eventual field visits.
- Coaching by scientists, assistants, consultants and field experts
- Take-home exercises
- Attendance to these 9 sessions is mandatory! Every absence is penalized by -1 point
- Individual in-class quizzes are possible and may lead to a 0.5 to 2 points bonus to be added to the final exam grade.

NOTE: The Business Case, which is the essential part of the course GEST-H502, is developed **only** during the 9 dedicated sessions! The physical presence to these sessions is mandatory! Every absence is penalized. Please be aware of the weight of the Business Case, on the final exam mark in particular, and on the exam sessions in general.

*\* A participation to this course implies an acknowledgement of the above rules and their impact on the exam sessions and marks.*

## Contribution to the teaching profile

- (1) - Improve significantly the capacity of the future engineer as regards the integrated and global vision of supply chain management.
- (2) - Equip the future engineers with the critical knowledge and skills necessary for modelling and managing supply chain performance.

## References, bibliography and recommended reading

- > Designing and Managing the Supply Chain: Concepts, Strategies & Case Studies. D. Simchi-Levi, P. Kaminsky, E. Simchi-Levi. Edition McGraw Hill.

- > Supply Chain Management: Strategy, Planning and Operation. S. Chopra & P. Meindl. Edition Prentice Hall.
- > Management Industriel et Logistique: Conception et pilotage de la Supply Chain. G. Baglin, O. Briel, A Garreau, M. Greif, 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  
alassane.ndiaye@ulb.be

## Evaluation method(s)

written examination, Project, Written report and Oral presentation

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

- > (WEX) - Written exam: Multiple choice and/or open questions

- > (WBC) – Written Business Case report (evaluated according to a detailed grid).
- > (OBC) – Oral Business Case presentation (evaluated according to a detailed grid comprising distinct criteria for the group and for the individual student member).
- > (bonus) – Individual in-class quizzes bonuses
- > (penalties) – penalties for absences (negative value)

The final mark is computed as follow: 20%WEX + 80%(WBC+OBC) + bonus + penalties for absences

## 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-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