UAB
Universitat Autònoma de Barcelona

2021/2022

Basics of Logistics and Supply Chain Management

Code: 42640
ECTS Credits: 6

Degree	Type	Year	Semester
4313489 Logistics and Supply Chain Management	OB	1	1

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

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Use of Languages

Principal working language: english (eng)

Prerequisites

Being one of the initial courses in this master, no special prerequisites are needed (i.e., any student that has been accepted in this master is assumed to have the necessary technical and quantitative background to follow the course without many difficulties).

Objectives and Contextualisation

- To provide a practical introduction to the field of Logistics & Supply Chain Management (LSCM).
- To learn the strategic importance for any firm of good supply chain design, planning, and operation.
- To analyze how supply chain agents can be used during supply chain design, planning, and operation to improve performance.
- To provide a basic understanding of analytic methodologies for supply chain analysis.

Competences

- Address problems of management and coordination of logistics operations in production, transport and services in a holistic approach, by means of the consistent application of the supply chain management concepts and strategies, taking into account the pertinent aspects of environment, human capital, quality, technology, and economics.
- Analyse, organise and discuss situations in logistics in order to identify and model the dependency relationships, influence and impact that usually occur in the main performance indicators and quality factors as well as evaluating their complexity.
- Demonstrate abilities in oral and written communication both in the student's native language and in English. Demonstrate synthesis skills and ability in presentation techniques.
- Demonstrate information management skills: ability to retrieve and analyse information from different sources.
- Possess and understand knowledge that provides a basis or opportunity for originality in the development and/or application of ideas, often in a research context
- Select and apply the most relevant analytical methodologies, strategies and current technologies for designing solutions to the problems of management and coordination of material, information and financial flows.
- Student should possess an ability to learn that enables them to continue studying in a manner which is largely self-supervised or independent
- Work collaboratively in a group.

Learning Outcomes

1. Analyze and discuss cases, problems and issues regarding the requirements and logistics options.
2. Assess the impact of logistics and SCM activities.
3. Demonstrate abilities in oral and written communication both in the student's native language and in English. Demonstrate synthesis skills and ability in presentation techniques.
4. Demonstrate information management skills: ability to retrieve and analyse information from different sources.
5. Identify strengths and weaknesses through comparison with best practices in LSCM
6. Know general LCSM terminology.
7. Possess and understand knowledge that provides a basis or opportunity for originality in the development and/or application of ideas, often in a research context
8. Student should possess an ability to learn that enables them to continue studying in a manner which is largely self-supervised or independent
9. Understand LCSM as an area.
10. Understand general LSCM concepts and strategies.
11. Understand problems particular to the field of LSCM.
12. Understand the general LSCM framework
13. Work collaboratively in a group.

Content

- S01 Overview + intro to LSCM
- S02 SC drivers + distribution network
- S03 Network design deterministic
- S04 Network design uncertainty
- S05 Transportation
- S06 Warehousing + material handling
- S07 Review of concepts
- S08 Basic forecasting methods
- S09 Advanced forecasting methods
- S10 Aggregate planning in the SC
- S11 Economies of scale and inventories
- S12 Simheuristics for smart logistics
- S13 Review of concepts

Note: This course represents a first introduction to LSCM. In order to give a global picture of most LSCM topics, a lot of concepts are introduced in the course. Some of these concepts will appear again in other courses of the Master, where they will be analyzed in more detail.

Methodology

Teaching will be offered on campus or in an on-campus and remote hybrid format depending on the number of students per group and the size of the rooms at 50% capacity.

The course is based on a set of slides (PowerPoint presentations). At the end of each slide, a set of lab activities are given. These activities include reviewing scientific articles, reading Wikipedia reports, and completing software labs with Excel Solver, Lindo, R or Minitab. These activities can be completed either in small groups or individually. Students are also encouraged to prepare short PowerPoint presentations on related topics.

The proposed teaching methodology may undergo some modifications according to the restrictions imposed by the health authorities on on-campus courses.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Supervised			
Lab1 - Articles review and problem solving with software	75	3	1, 2, 10, 12, 6, 11, 9, 5, 8, 4, 7, 3, 13
Lab2 - Articles review and problem solving with software	75	3	1, 2, 10, 12, 6, 11, 9, 5, 8, 4, 7, 3, 13

Assessment

- Homework labs (small groups with up to 3 students are possible)
- Test 1 TP (individual)
- Test 2 TP (individual)
- Initial course score = 0.4*Homework (labs) + 0.3*Test1 + 0.3*Test2
- The intial course score can be increased by in-class participation, e.g.: volunteer presentations, etc.
- There will be an additional evaluation for students who have not reached the necessary score to pass the course during the regular period.

The proposed evaluation activities may undergo some changes according to the restrictions imposed by the health authorities on on-campus courses.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Lab1	The labs constitute up to 40% of the final score	0	0	1, 2, 10, 12, 6, 11, 9, 5, 8, 4, 7, 3, 13
Lab2	The labs constitute up to 40% of the final score	0	0	1, 2, 10, 12, 6, 11, 9, 5, 8, 4, 7, 3, 13
Test1	30%	0	0	1, 2, 10, 12, 6, 11, 9, 5, 3
Test2	30%	0	0	1, 2, 10, 12, 6, 11, 9, 5, 3

Bibliography

During the course, the instructor will provide students with a complete set of slides in PDF format. These slides also contain references to scientific articles that will be accessible either in open access fromat or via the University library.

Some additional books that students can optionally check to extend their knowledge on the topics of this course are listed bellow:

- Bowersox, D.; Closs, D.; Cooper, M.; Bowersox, J. (2019): Supply Chain Logistics Management. McGraw Hill.
- Chopra, S.; Meindl, P. (2018): Supply Chain Management. Prentice Hall.
- Jonsson, P. (2008): Logistics and Supply Chain Management. McGraw Hill.
- Waters, D. (2009): Supply Chain Management: An Introduction to Logistics. Palgrave Macmillan.
- Wiston, W.; Albright, S. (2008): Spreadsheet Modeling and Risk Analysis. Cengage Learning.

Software

This course makes use of the following software: MS Excel, Open Solver for Excel, R or Minitab, Lindo and, ocassionally, Python.