Universitat Autònoma de Barcelona

2021/2022

Logistics Management

Code: 42648
ECTS Credits: 13.5

Degree	Type	Year	Semester
4313489 Logistics and Supply Chain Management	OT	2	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.

Contact

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Use of Languages

Principal working language: english (eng)

External teachers

Jana Bikovska

Prof. Dr. habil. Galina Merkuryeva

Prerequisites

The student has to have successfully passed the following subjects:

- Decision making (42653)

Objectives and Contextualisation

This module has 1 course unit (CU):

Decision Synthesis Principles and Practice in Logistics(13.5 ECTS)

(Prof. Dr. habil. Galina Merkuryeva - Mg.Sc.ing. Jana Bikovska)

After the course the student will:

- Understand, identify and analyse different managerial problems in logistics and supply chain management taking into account general management concepts, human resource issues, information technology capability, and economic and commercial aspects
- Be able to describe and interpret general concepts and methods of decision synthesis and their application aspects to extended LSCM problem solving
- Know how to select and employ the right techniques and tools for decision analysis and synthesis in logistics management
- Design and integrate major functional components and IT tools for business modelling, managerial decision-making and information support in LSCM
- Be able to integrate knowledge and learning experiences in logistics and supply chain management practices.

Competences

- Apply a rigorous and efficient approach to problem solving.
- Apply quantitative methods and techniques based on optimisation and/or simulation models in order to evaluate the different alternatives and select the most promising solution to be implemented
- Elaborate solid arguments based on quantitative models and analytical methods in order to convince and motivate decision makers, determine the adequate LCSM partners and then plan and coordinate the project to implement the solution.
- Identify the main aspects to be planned in the resolution of a logistic project, specifying the project boundaries, and leading with a solution
- Select and apply the most relevant analytical methodologies, strategies and current technologies for designing solutions to the problams 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
- Students should be able to integrate knowledge and face the complexity of making judgements from information which, being incomplete or limited, include reflections on the social and ethical responsibilities linked to the application of their knowledge and judgements
- Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
- Work collaboratively in a group.

Learning Outcomes

1. Apply a rigorous and efficient approach to problem solving.
2. Identify the main aspects to be planned in the resolution of a logistic project, specifying the project boundaries, and leading with a solution
3. Know how to select and use the right techniques and tools for decision-making in logistics.
4. Set arguments for decision based on quantitative methods.
5. Student should possess an ability to learn that enables them to continue studying in a manner which is largely self-supervised or independent
6. Students should be able to integrate knowledge and face the complexity of making judgements from information which, being incomplete or limited, include reflections on the social and ethical responsibilities linked to the application of their knowledge and judgements
7. Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
8. Synthesise the different aspects (managerial, economic, commercial and technological) that should support decision making processes in logistics.
9. Understand, identify and analyse different management problems in Logistics and Supply Chain Management taking in consideration the general concepts of management, human resources, information systems, finance and commercial aspects.
10. Use and design different kinds of information systems for supporting problem solving and decision making in logistics.
11. Work collaboratively in a group.

Content

- Key issues and concepts in logistics management
- Theoretical principles of decision synthesis in logistics and supply chain management
- Managerial problems and integration solutions in internal logistics with focus on production planning and control
- Managerial problems and integrated solutions in supply chain management with focus on collaborative planning and inventory replenishment
- Managerial problems and integrated solutions in an international logistics company with focus on its multi-functionality
- Managerial problems and integrated solutions in an industrial company
- Decision synthesis practice in virtual simulation environments
- Innovative platforms, technologies and software

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 organized by means of traditional lectures combined with practical work and seminars. The practical part of the course explores special tools in the form of management simulation games that are used in dynamic laboratories to provide virtual business environments. In-class interactive seminars are introduced to explain technology issues and analyse intermediate results.

The learning process will combine the following activities:

- Theory lectures: Aim to understanding the state of the art inlogistics management; explain theoretical principles of decision synthesis and procedure, methods and tools for business modelling, decision-making and information support in logistics and supply chain management.
- Interactive laboratory sessions: Aim to understand challenges, elements and solutions for logistics and supply chain management; get experiences in using and designing digital logistics management tools; split in four laboratory blocks:
  Block 1. Internal logistics management: focuses on production and purchasing functions of an assembly plant. Includes teamwork (2-3 students in a group) to plan production and purchase orders, develop capacity plans and job schedules; perform simulation runs in a virtual production environment in order to estimate results of the planning decisions per a production week; study different control strategies and planning scenarios, and participate in classroom discussions. As the results of this work, students presenta *teamwork project*aiming at implementing a dynamic production planning tool to allow data transfer and processing.
  Block 2. Collaborative planning and inventory replenishment: focuses on general mechanisms and methods of in multi-echelon supply chain management with a particular focus on supply chain dynamics and inventory management.
  *Block 3. International logistics management:*focuses on different functional aspects of international logistics company management (production and purchasing, distribution and transportation, marketing and investments, facility location and demand forecasting as well as finances).
  Block 4. Management synthesis practice in a virtual industrial environment: focuses on production planning, sales and market management, purchasing of raw materials, finance and quality management, capacity expansion, new product development, shortage of raw materials, distribution control, line balancing, yearly balance publication, evolving MIS and an expert-like decision support systems.
- Workshop on innovative platforms, technologies and software: Independent learning and technology testing, search and study of literature and selected software, use case development and in-class presentation with further discussions.
- Autonomous work: reading, self-testing, reflecting. Retrieve and analyse information from different sources; reflect learning and problem solving processes in order to derive lessons learned.

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: Directed			
Lab Block 1	32	1.28	3, 2, 6, 7, 5, 1, 8, 11
Lab Block 2	8	0.32	3, 4, 6, 11

Lab Block 3	17	0.68	9, 6, 7, 5, 8
Lab Block 4	31	1.24	3, 9, 4, 6, 5, 8, 11, 10
Theory Lectures	48	1.92	3, 9, 4, 2, 1, 8, 10
Type: Supervised			
Teamwork project	48	1.92	3, 2, 6, 7, 5, 1, 8, 11
Use case development	48	1.92	9, 2, 7, 5, 1, 10
Type: Autonomous			
Self-Learning	103.5	4.14	3, 9, 5, 8, 11

Assessment

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

The final mark of this course will be calculated from the assessment of following evaluation activities:

- Lab Blocks from 1 to 4. For Block 1, a teamwork project has to be developed and presented. For each other block, a report is required that follows given structural guidelines. All reports are marked according to formal and contents aspects. All reports are electronically submitted on the course page at the university e-platform.
- Workshop (scientific report and presentation). The topic can either be chosen from a given list or proposed by the student. Each student has to submit electronically his/her topic together with a 200 words abstract. Teachers decide about acceptance/rejection of the topic. In the report, students analyse functionality of the selected platform/IT tool, technologies applied in the software, its innovation aspects and perspectives, and gives a use case example. Student reports and presentations will be marked by the teachers (peer review).
- Final exam. Theoretical questions on topics addressed throughout the semester in order to present an understanding of management and decision synthesis in logistics.

The student passes course if all lab reports, a teamwork project, a scientific report and the final exam are evaluated as 'sufficient' (by grade 4.0 corresponding to a minimum of 50% of the maximum performance per evaluation activity) at least. The student fails if performance in at least one of the evaluation activities does not reach the 50% threshold or if a teamwork project and other reports are not submitted within the due date specified by the professor.

The weights of each evaluation activity are given in the table below.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final Exam	30%	2	0.08	3, 9, 5, 8, 10
Lab Block 1 incl. teamwork project	25%	0	0	3, 2, 6, 7, 5, 1, 8, 11
Lab Block 2	5%	0	0	3, 4, 6, 11
Lab Block 3	10%	0	0	9, 6, 7, 5, 8
Lab Block 4	20%	0	0	3, 9, 4, 6, 5, 8, 11

Workshop (a scientific report and presentation)	10%	0	0	7, 5, 10

Bibliography

1. F. Robert Jacobs, William Lee Berry, David Clay Whybark, Thomas E Vollmann. Manufacturing Planning and Control for Supply Chain Management: APIC/CPIM Certification Edition, McGraw-Hill Profesional, 2011.
2. Sunil Chopra, Peter Meindl. Supply Chain Management. Strategy, Planning, and Operations. Pearson Education, 2018.
3. Michael Pidd. Tools for thinking. Modelling in management science. John Wiley&Sons, 2012.
4. Laudon K.C., Laudon J.P. Management Information Systems, Managing the Digital Firm, 14th Edition, Pearson Education International, 2016.
5. Merkuryev Y., Merkuryeva G., Bikovska J., Hatem J., Desmet B. Business simulation game for teaching multi-echelon supply chain management. International Journal of Simulation and Process Modelling. Volume 5, No 4, 2009, p. 289.-299.
6. Merkurjeva G., Bikovska J., Grubbstrom R., Weber J. Development of learning scenarios for network-based logistics simulation game. Scientific Proc., Ser. 5. Computer Science. Vol. 20. Information Technology and Management Science. RTU, 2004, p. 148-156.
7. RASMUSSEN, N.; CHEN, C. Y.; BANSAL, M. Business Dashboards : A Visual Catalog for Design and Deployment. Hoboken, N.J.: Wiley, 2009.

Software

No specific S/W is foreseen