UAB
Universitat Autònoma de Barcelona

Logistics Information Systems

Code: 44766
ECTS Credits: 16.5

2025/2026

Degree	Type	Year
Logistics and Supply Chain Management	OP	2

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Teachers

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Teaching groups languages

You can view this information at the end of this
document.

Prerequisites

Information Technologies (2nd semester) successfuly completed

Objectives and Contextualisation

CU1: Logistics Information Systems (9 ECTS)

This course "Information technologies in logistics" is an important component part of logistics specialist
theoretical training that enables students to effectively work in the area of business logistics, based on use of
modern information technology.

After the course, students are expected to be able:

- to consider, interpret and use professional terminology in logistics and related information technologies
  area
- to discuss about the information technologies in logistics, to analyze problems and trends of the industry
- to solve thematic tasks in the field of logistics IT and to compare results of different solution scenarios
  and its performance results
- to describe the relevance of the chosen logistics information technology topics, to classify existing
  solutions, analyze the existing problems and trends

CU2: Electronic Commerce in Logistics (4,5 ECTS)

1

This course "Electronic Commerce in Logistics" is an important component part of theoretical training for logistics specialists enabling an effective work in the area of electronic commerce by using advanced internet solutions.

After the course, students are expected to be able:

- To define, interpret and use professional terminology in the area of electronic commerce.
- To develop a project of e-commerce system.
- To evaluate designing and implementation techniques of e-commerce solutions.
- To explain the essence of application, possibilities and importance of information technologies in different areas of e-commerce.

CU3: Systems Analysis (3 ECTS)

The goal of the course is to acquire basic principles of logistics information systems analysis, system classifications, characteristics, basics of process theory, modelling and characteristics of complex system functioning, organization of logistics information system analysis process, its methods, and software-oriented notations.

After the course, students are expected to:

- be able to identify tasks of logistics information systems analysis
- have modelling and decision analysis skills and understand organizational requirements in case of new solutions and changes concerning logistics information systems
- know how to decompose the systems and analyse their structure
- know the basics of process theory, modelling and general characteristics of system functioning
- understand organization of logistics information systems analysis process and is able to apply corresponding methods

Learning Outcomes

1. CA27 (Competence) Address the development of e-commerce systems by looking at the different steps involved in their deployment (design, programming, testing and maintenance) from a holistic approach that considers their viability, reliability, and efficiency, as well as the challenges of integrating them into logistics operations.
2. CA28 (Competence) Identify IT needs in specific logistics systems and choose software that supports logistics operations (warehouse, inventory, transport and customer relationship management information systems, enterprise resource planning and supply chain planning, production planning and control information systems, supply chain event management information systems, etc.).
3. KA29 (Knowledge) Recognise logistics information systems and the main subsystems, how they work, how they are built and their principles.
4. SA38 (Skill) Apply basic systems analysis concepts, their features, laws, principles, structures and models to the context of logistics information systems.
5. SA39 (Skill) Use logistics information system modelling techniques to analyse decisions and draw up organisational requirements for new solutions and changes.
6. SA40 (Skill) Apply suitable basic (RFID/barcodes), processing, tracking and tracing (GPS, Galileo, etc.) and communications (wireless, mobile, networking, EDI, etc.) technologies to logistics and supply chain management.
7. SA41 (Skill) Select e-business tools in order to apply the principles of e-business system development.
8. SA42 (Skill) Apply the principles and mechanisms of information system reliability to logistics and e-commerce.

Content

CU1: Logistics Information Systems (9 ECTS)

In this course, the basics of logistics information technologies are examined; a special attention is paid to the basic functioning principles of logistics information systems and to the information technologies used in logistics, such as tracking and tracing technologies, object identification technologies, communication technologies. There are also examined examples of IT applications in the purchasing, manufacturing, distribution, transportation, inventory and warehouse logistics.

List of topics:

- The role of information technologies in LSCM.
- Basics of enterprises' information systems: introduction to IT, information systems in the enterprise, electronic business and electronic commerce, IS hardware and software, managing data resources, etc.
- Major subsystems and internal operation of logistic information systems
- Basic information technologies in logistics:
    - tracking & tracing (GPS, Galileo, etc.),
    - identification (barcoding, RFID),
    - communication (wireless, mobile, networking, EDI, etc.).
    - IT applications to support logistics functions (warehouse, inventory, transportation customer relationship management information systems, enterprise resource and supply chain planning, production planning and control information systems, supply chain event management information systems, etc.).

CU2: Electronic Commerce in Logistics (4,5 ECTS)

This study course covers the key concepts of electronic commerce and its application in logistics area that includes the organization of commercial activities and logistics systems management in the Internet using the advanced Web 2.0 and 3.0 technologies, by devoting the accent to the B2B, B2C, C2C, C2B and C2G models of the electronic commerce. By characterizing the electronic commerce concepts, the management problems of electronic business, as well as of material, information and financial flows are examined there. In this course, a special attention is paid to the development and implementation technologies, as well as to application and integration of principles of electronic commerce systems in logistics and supply chain management by taking into account the activities of Internet service providers, electronic payment methods, social networking and e-commerce security aspects. During practical lessons, an opportunity to obtain practical skills in the integration of e-commerce and logistics systems based on B2B system use case is supported there.

List of topics:

- · E-commerce in logistics: object of e-commerce, history and development stages, influence on economy.
- · E-commerce information technology: electronic data interchange, standards and classifiers, data identification methods.
- · Information systems of e-commerce: classification, models, e-payment, e-document and e-government systems.
- · Electronic business and marketing.
- · Development of e-commerce systems: design, programming, testing and maintenance.
- · Reliability of e-commerce information systems.
- · Efficiency of e-commerce information systems.
- · Integration of e-commerce and logistics: e-logistics.

CU3: Systems Analysis (3 ECTS)

The course concerns systems analysis tasks in the context of logistics information systems. It focuses on logistics information system modelling, decision analysis and organizational requirements for new solutions and changes. Functional decomposition and methods of structural analysis are includes in the course. Students learn system classifications and characteristics and general systems laws. Basics of process theory, modelling and characteristics of complex system functioning as well as organization of logistics information systems analysis process, its methods, and software-oriented notations are discussed.

List of topics:

- Tasks of logistics information systems analysis
- Modelling, decision analysis and organizational requirements for new solutions and changes
- Functional decomposition and structural analysis
- System's classifications and characteristics
- General system's laws
- Basics of process theory, modelling and general characteristics of system functioning
- Organization of logistics information systems analysis process and its methods
- Software-oriented notations of systems analysis process

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
CU1. Practise sessions	64	2.56	KA29, SA40, SA42, KA29
CU1. Theory lectures	64	2.56	CA28, KA29, SA42, CA28
CU2. Practise sessions	20	0.8	CA27, SA41, SA42, CA27
CU2. Theory lectures	30	1.2	CA27, KA29, SA41, SA42, CA27
CU3. Introduction of practice sessions	4	0.16	CA27, SA38, SA39, CA27
CU3. Lectures	16	0.64	CA28, KA29, SA38, SA39, CA28
Type: Supervised			
CU1. Student presentation on the research topic	16	0.64	CA27, CA28, CA27
CU1. Test on ITL	8	0.32	CA27, KA29, SA40, CA27
CU2. Student presentation on the research topic	2	0.08	CA27, SA42, CA27
CU3. Group sessions	6	0.24	CA28, SA38, SA39, CA28
CU3. Individual sessions	6	0.24	CA27, CA28, SA38, SA39, CA27
Type: Autonomous			
CU1. Individual research essay	32	1.28	CA27, CA28, SA40, SA42, CA27
CU1. Mastering in the lectured course material	32	1.28	CA27, KA29, CA27
CU2. Individual research essay	32	1.28	CA27, CA28, KA29, SA41, SA42, CA27
CU2. Mastering in the lectured course material	24	0.96	CA27, KA29, CA27
CU3. Individual home assignments/exam	28	1.12	CA27, KA29, SA38, SA39, CA27
CU3. Mastering the course lecture material	12	0.48	CA28, KA29, CA28

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

CU1: Logistics Information Systems (9 ECTS)

The course is organized by means of traditional lectures combined with seminars and practical work. The learning process will combine the following activities:

- Classroom sessions: include theory lectures, discussions and seminars for understanding the main using of information technologies
- Practise sessions: Laboratory works aimed to demonstrate the ability to perform assigned tasks, carrying out different tasks scenarios and comparative analysis of its results.
- Essay elaboration and presentation: In-class presentations on the essay topics related to IT in logistics with further discussions with the audience
- Autonomous work

Practical cases and essay about using information technologies to support logistics functions are used for promoting students hand on skills.

CU2: Electronic Commerce in Logistics (4,5 ECTS)

The course is organized by means of traditional lectures combined with seminars and practical work. The learning process will combine the following activities:

- Classroom sessions: include theory lectures, discussions and seminars for understanding the main usage, possibilities and trends of e-commerce.
- Practise sessions: Laboratory works aimed to demonstrate the ability to perform assigned tasks, carrying out different tasks scenarios and comparative analysis of results.
- Essay elaboration and presentation: In-class presentations on the essay topics related to IT in logistics with further discussions with the audience.
- Autonomous work.

Practical cases and essayabout using information technologies to support logistics functions are used for promoting students hand on skills.

CU3: Systems Analysis (3 ECTS)

The course is organized by means of traditional lectures combined with group and individual practice sessions. The learning process will combine the following activities:

- Lectures, where the basics of the theories and methods are explained
- Group practice sessions, where students can share their knowledge and train their collaborative skills in systems analysis tasks
- Individual sessions where students shall perform the tasks individually to train their independent work skills
- Individual assignments where students autonomously have fulfil the tasks without the help of the teacher.

Use of Generative Artificial Intelligence Tools - Policy Statement

This module acknowledges the increasing role of generative artificial intelligence (AI) as a support tool in academic work. Accordingly, the use of such tools is permitted on a limited basis, strictly for enhancing the formal aspects of student submissions. Acceptable uses include improving writing quality, style, clarity of exposition, linguistic accuracy, and translation, as well as obtaining occasional technical assistance.

However, the use of generative AI to create the substantive content of assessed work is strictly prohibited. This includes, but is not limited to: the development of methodological approaches, the design or execution of experiments, the analysis or interpretation of results, the formulation ofideas, and the drafting of conclusions. These tasks must be carriedout entirely by the student, as they constitute the essential intellectual and creative contributions required to successfully complete the subject.

Students are required to explicitly declare the use of any generative AI tools in each submitted piece of work. This declaration must include:

- The specific tools used
- The purpose for which they were used
- The extent of their contribution

Excessive, irresponsible, or unnecessary use of such tools may negatively affect the final grade. Any undeclared or inappropriate use of generative AI may result in failure of the subject.

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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
CU1. Exam	40%	2	0.08	CA28, KA29, SA42
CU1. Individual research essay	35%	1	0.04	CA27, CA28, SA40, SA42
CU1. Laboratory work	25%	0	0	KA29, SA40, SA42
CU2. Exam	40%	2	0.08	CA27, KA29, SA41, SA42
CU2. Individual research essay	35%	0	0	CA27, CA28, KA29, SA41, SA42
CU2. Laboratory work	25%	0	0	CA27, SA41, SA42
CU3. Group and individual sessions	40%	0	0	CA28, SA38, SA39
CU3. Individual home assignments/examination	60%	11.5	0.46	CA28, KA29, SA38, SA39

CU1, CU2 and CU3

There are three separate final exams per module covering courses CU1, CU2 and CU3. It is comprised of theoretical questions and small cases on topics addressed throughout the semester in order to present generic understanding on logistic information systems in correspondence to learning objectives. The final exam is run in a written form or electronically; cases might require additional performance on paper or by applying specific software packages evaluated as part of the exam.

The student passes the module if the practical assignments, project and the final exam are evaluated "sufficient" (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 practical assignments and project reports are not submitted within the due date specified by the professor.

In case of fail, the student needs to retake just that part of module exam s/he failed. The decision about this is in hands of the examiner. If any of the practical assignments or the project are failed, the student will either be provided with a new assignment/project or asked to re-submit its report according to the corrections/indications provided by the professor.

Students who fail an exam may be permitted the opportunity to retake this examination twice at a maximum. After that, his/her right for examination terminates. Retaking an exam is allowed only in case the student previously failed, but not to improve grades achieved so far.

Examination dates are announced in due time, but at least two weeks prior to the respective exam. Submission deadlines for practical assignments, project reports and any presentation activities related to them are announced when giving assignments/project to students. The final exam and a first opportunity for eventuallyretaking it are scheduled within specified examination periods. Specific examination dates are published on the local LSCM website.

CU1: Logistics Information Systems (9 ECTS)

The final grade will be calculated from the assessment of different evaluation activities:

- Individual research essay: Report on the individual research about using information technologies to support logistics functions. Includes oral presentation of the research results on the essay topic
- Laboratory work: Laboratory studies in the field of logistics information technologies and systems
- Written exam. Students have to answer 2 theoretical question on the topics discussed during lectures

CU2: Electronic Commerce in Logistics (4,5 ECTS)

The final grade will be calculated from the assessment of different evaluation activities:

- Individual research essay: Report on the individual applied research of e-commerce technologies. Includes oral / visual presentation of the research results on the essay topic.
- Laboratory work: Laboratory studies in the field of e-commerce and logistics integration.

Written exam. Students have to answer 3 theoretical questions on the topics discussed during lectures.

CU3: Systems Analysis (3 ECTS)

The final grade will be calculated from the assessment of different evaluation activities (note - the grading basically is made for the practical work the students do during different sessions):

- Grades obtained in group sessions
- Grades obtained in individual sessions
- Grades obtained in home assignments
- Examination (may be in the form of assignments)

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

Bibliography

CU1: Logistics Information Systems (9 ECTS)

- Kenneth C. Laudon, Jane Laudon. Management Information Systems. 13/E, 2014, Prentice Hall.
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- Carol V. Brown, Daniel W. DeHayes, Jeffrey A. Hoffer, Wainright E. Martin, William C. Perkins. Managing Information Technology. 7/E, 2012, Prentice Hall.
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CU2: Electronic Commerce in Logistics (4,5 ECTS)

- Chaffey D. E-Business and E-Commerce Management: Strategy, Implementation and Practice. - Prentice Hall, 2011. - 800 p.
- Laudon K. C., Traver C. G. E-Commerce 2017: Business, Technology, Society. - Prentice Hall, 2017 (13th ed.). - 912 p.
- Turban, E., Lee, J. K., King D., Liang,, T. P., Turban, D. Electronic Commerce: A Managerial and Social Networks Perspective. - Springer, 2015. - 792 p.
- Phillips, J. E-Commerce Analytics: Analyze and Improve the Impact of Your Digital Strategy. - Pearson FT Press, 2016. - 368 p.

CU3: Systems Analysis (3 ECTS)

- Kendall K.E., Kendall J.E. Systems Analysis and Design. Pearson, 2013, next edition - 2019.
- Bose N.K. Multidimensional Systems Theory and Applications. Springer, The Netherlands, 2009, 292 p.
- Sandkuhl, K., Stirna, J., Persson, A., Wißotzki, M. Enterprise Modeling: Tackling Business Challenges with the 4EM Method, Springer, 2014.
- Volker Stiehl, Process-Driven Applications with BPMN, Springer, 2014

Software

- Modelling Software Aimsun https://www.aimsun.com/
- Vitech Core Modelling Software https://www.vitechcorp.com/

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.