Course guide
250265 - LOGURBTTRA - Urban Logistics and Transport Terminals

Last modified: 01/10/2023

Unit in charge: Barcelona School of Civil Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.

Degree: BACHELOR'S DEGREE IN PUBLIC WORKS ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2023 **ECTS Credits:** 4.5 **Languages:** Spanish

LECTURER

Coordinating lecturer: JOSÉ MAGÍN CAMPOS CACHEDA

Others: JOSÉ MAGÍN CAMPOS CACHEDA

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
3091. Ability to construct, conserve, dimension and design roads and the items comprising basic road provision
3092. Ability to construct and conserve railway lines with knowledge of the application of the specific technical regulations, differentiating the characteristics of the rolling stock
3093. Knowledge of the regulatory framework of urban management
3094. Knowledge of the influence of infrastructures on town and country planning enabling participation in the urbanisation of urban public space, and on plans for urban services and utilities such as water distribution, sewage disposal, waste management, transport systems, traffic, lighting, etc
3095. Knowledge of the design and functioning of intermodal exchange infrastructures such as ports, airports, railway stations and transport logistics centres

Generical:
3105. Students will learn to identify, formulate and solve a range of engineering problems. They will be expected to show initiative in interpreting and solving specific civil engineering problems and to demonstrate creativity and decision-making skills. Finally, students will develop creative and systematic strategies for analysing and solving problems.
3106. Students will learn to assess the complexity of the problems examined in the different subject areas, identify the key elements of the problem statement, and select the appropriate strategy for solving it. Once they have chosen a strategy, they will apply it and, if the desired solution is not reached, determine whether modifications are required. Students will use a range of methods and tools to determine whether their solution is correct or, at the very least, appropriate to the problem in question. More generally, students will be encouraged to consider the importance of creativity in science and technology.
3107. Students will learn to identify, model and analyse problems from open situations, consider alternative strategies for solving them, select the most appropriate solution on the basis of reasoned criteria, and consider a range of methods for validating their results. More generally, students will learn to work confidently with complex systems and to identify the interactions between their components.
3111. Students will learn to plan, design, manage and maintain systems suitable for use in civil engineering. They will develop a systematic approach to the complete life-cycle of a civil engineering infrastructure, system or service, which includes drafting and finalising project plans, identifying the basic materials and technologies required, making decisions, managing the different project activities, performing measurements, calculations and assessments, ensuring compliance with specifications, regulations and compulsory standards, evaluating the social and environmental impact of the processes and techniques used, and conducting economic analyses of human and material resources.
3112. Students will develop an understanding of the different functions of engineering, the processes involved in the life-cycle of a construction project, process or service, and the importance of systematising the design process. They will learn to identify and interpret the stages in preparing a product design specification (PDS), draft and optimise specifications and planning documents, and apply a systematic design process to the implementation and operation phases. Students will learn to write progress reports for a design process, use a range of project management tools and prepare final reports, and will be expected to show an awareness of the basic economic concepts associated with the product, process or service in question.
3113. Students will learn to identify user requirements, to draft definitions and specifications of the product, process or service in question, including a product design specification (PDS) document, and to follow industry-standard design management models. Students will be expected to show advanced knowledge of the steps involved in the design, execution and operation phases and to use the knowledge and tools covered in each subject area to the design and execution of their own projects. Finally, students will assess the impact of national, European and international legislation applicable to engineering projects.

Transversal:
586. ENTREPRENEURSHIP AND INNOVATION - Level 2. Taking initiatives that give rise to opportunities and to new products and solutions, doing so with a vision of process implementation and market understanding, and involving others in projects that have to be carried out.
589. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 2. Applying sustainability criteria and professional codes of conduct in the design and assessment of technological solutions.
594. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
584. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

TEACHING METHODOLOGY

The course consists of classroom activity: theoretical lectures mixed with resolution of practical problems.

Although most of the sessions will be given in the language indicated, sessions supported by other occasional guest experts may be held in other languages.

LEARNING OBJECTIVES OF THE SUBJECT

Ability to construct, conserve, dimension and design roads and the items comprising basic road provision.
Ability to construct and conserve railway lines with knowledge of the application of the specific technical regulations, differentiating the characteristics of the rolling stock.
Knowledge of the regulatory framework of urban management.
Knowledge of the influence of infrastructures on town and country planning enabling participation in the urbanisation of urban public space, and on plans for urban services and utilities such as water distribution, sewage disposal, waste management, transport systems, traffic, lighting, etc.
Knowledge of the design and functioning of intermodal exchange infrastructures such as ports, airports, railway stations and transport logistics centres.

Transportation infrastructures and urban services itinerary

Development level of expertise acquired the basics of planning and urban services, and transportation management.

The aim of the course is to enable students to analyze all aspects of urban logistics and transport terminals. Therefore, training is segmented into two main groups: first, there are tools for the analysis of problems related to the topic of the course, such as routing and transport economics, and secondly, it provides a Information on training and logistics terminals, entering the key points we, common problems and professional practices.

STUDY LOAD

Type	Hours	Percentage
Guided activities	4,5	4.00
Hours medium group	18,0	16.00
Self study	63,0	56.00
Hours large group	18,0	16.00
Hours small group	9,0	8.00

Total learning time: 112.5 h

CONTENTS

UNIT 1

Description:
Logistics. Terminals. Transport logistics. Economic. Logistics concept. Trade-offs. Networks. Road transport. Freight. Logistics operators. Logistic potential. The Centers Integrated Goods (CISG). Logistics Management. Strategic logistics.
case studies of logistics
Case Studies transport economics

Full-or-part-time: 33h 36m
Theory classes: 2h
Practical classes: 8h
Laboratory classes: 4h
Self study : 19h 36m

UNIT 2

Description:
Center. Many centers. Costs. Service. Competition. Dynamics. Years.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

LESSON 3

Description:
Design delivery routes: TSP, CPP VRP. Heuristic. Many-to-many. Packet networks. Setting logistics. Stocks. Degree of decentralization. Metaheuristic. Ideas SCM, MRP, DRP, JIT, TQC, CC, etc..

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

UNIT 4

Description:
Basics. Main distribution strategies. Stock management. Examples.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

UNIT 5

Description:
Cost functions. Economies of scale and network. Pricing. Funding.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 6

Description:
Description of the market and industry. Intermodal transport. Exchangers. Demand modeling (interregional flows, micro decisions; effect trucks).

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 7

Description:
Cities as business units, service providers.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 8

Description:
Components. Functional design. Queuing theory

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 9

Description:
traffic trends, SSS, container management, quality, rates, internal transport, passenger ferry terminal, etc..

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 10

Description:
Accesses shaped terminals, billing, management luggage capacity subsystems.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 11

Description:
layout. Processes. Examples. Main features of the railway sector.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 12

Description:
Teaching Integrated Freight & Logistics Activities Areas. Need, sizing and design functional economic effects.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 13

Description:
Environmental costs. Effects of environmental costs on logistics operations. Future prospects. Energy costs

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 14

Description:
Regulation. Funding. PPP models.

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

ITEM 15

Description:
New technologies of information and communication applied to logistics

Full-or-part-time: 7h 11m
Theory classes: 3h
Self study : 4h 11m

ITEM 16

Description:
Advanced topics of research in logistics and terminals

Full-or-part-time: 4h 48m
Theory classes: 2h
Self study : 2h 48m

GRADING SYSTEM

The mark of the course is obtained from the ratings of continuous assessment.

Continuous assessment consist in several activities, both individually and in group, of additive and training characteristics, carried out during the year (both in and out of the classroom).

The evaluation tests consist of a part with questions about concepts associated with the learning objectives of the course with regard to knowledge or understanding, and a part with a set of application exercises.

Continuous assessment (E), coursework (T). Final Score = 0.7 * E + 0.3 * T

Criteria for re-evaluation qualification and eligibility: Students that failed the ordinary evaluation and have regularly attended all evaluation tests will have the opportunity of carrying out a re-evaluation test during the period specified in the academic calendar. Students who have already passed the test or were qualified as non-attending will not be admitted to the re-evaluation test. The maximum mark for the re-evaluation exam will be five over ten (5.0). The non-attendance of a student to the re-evaluation test, in the date specified will not grant access to further re-evaluation tests. Students unable to attend any of the continuous assessment tests due to certifiable force majeure will be ensured extraordinary evaluation periods.

These tests must be authorized by the corresponding Head of Studies, at the request of the professor responsible for the course, and will be carried out within the corresponding academic period.

EXAMINATION RULES.

Failure to perform a continuous assessment activity in the scheduled period will result in a mark of zero in that activity.

BIBLIOGRAPHY

Basic:

- Ballou, Ronald H. Logística empresarial : control y planificación. 1. Barcelona: Díaz de Santos, 1991. ISBN 8487189687.