Course guides
2500044 - GECGETRANS - Transportation Management

Unit in charge: Barcelona School of Civil Engineering
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.
Degree: BACHELOR'S DEGREE IN CIVIL ENGINEERING (Syllabus 2020). (Optional subject).
Academic year: 2021 ECTS Credits: 6.0 Languages: Spanish

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
14422. Capacity for the construction and conservation of roads, as well as for the dimensioning, the project and the elements that make up the basic road equipment. (Specific technology module: Urban Transport and Services)
14423. Capacity for the construction and conservation of railway lines with knowledge to apply specific technical regulations and differentiating the characteristics of the mobile material. (Specific technology module: Urban Transport and Services)
14424. Knowledge of the urban management regulation framework. (Specific technology module: Urban Transport and Services)
14425. Knowledge of the influence of infrastructure in the planning of the territory and to participate in the urbanization of urban public space, such as water distribution, sanitation, waste management, transport systems, traffic, lighting, etc. (Specific technology module: Urban Transport and Services)
14426. Knowledge of the design and operation of infrastructures for modal exchange, such as ports, airports, railway stations and transport logistics centers. (Specific technology module: Urban Transport and Services)

Generic:
14380. Scientific-technical training for the exercise of the profession of Technical Engineer of Public Works and knowledge of the functions of advice, analysis, design, calculation, project, construction, maintenance, conservation and exploitation.
14383. Ability to project, inspect and direct works, in their field.
14385. Ability to carry out territorial planning studies and environmental aspects related to infrastructure, in its field.
14386. Capacity for maintenance, conservation and exploitation of infrastructure, in its field.
14389. Knowledge of the history of civil engineering and training to analyze and assess public works in particular and construction in general.
14391. Conceive, project, manage and maintain systems in the field of construction engineering. Cover the entire life cycle of an infrastructure or system or service in the field of construction engineering. (Additional school competition).
TEACHING METHODOLOGY

The course consists of 2 hours per week of classroom activity (large size group) and 2 hours weekly with half the students (medium size group).

The 2 hours in the large size groups are devoted to theoretical lectures, in which the teacher presents the basic concepts and topics of the subject, shows examples and solves exercises.

The 2 hours in the medium size groups is devoted to solving practical problems with greater interaction with the students. The objective of these practical exercises is to consolidate the general and specific learning objectives.

Support material in the form of a detailed teaching plan is provided using the virtual campus ATENEA: content, program of learning and assessment activities conducted and literature.

LEARNING OBJECTIVES OF THE SUBJECT


1 Capacity for the management and exploitation of infrastructures for modal exchange, such as ports, airports, railway stations and logistics transport centers.

Knowledge of analysis and evaluation tools for transport systems such as: operational research, traffic theory, analysis of operations, techniques for estimating and forecasting demand, transport economics, evaluation of alternatives, modeling of systems and allocation of flows. Knowledge of the causal and quantitative functioning of the transport system, as well as the behavior of the different agents that comprise it (users, operators and administration / society). Knowledge of the design, operation and operation of transport terminals and infrastructures, as well as the management of the resources necessary for their operation and of the patterns of mobility of people and goods and their relationship with ICT: Terminals for modal passenger exchange in urban public transport systems, airport terminals (land side management, air side, baggage management system), port terminals (operation of container terminals, liquid / solid bulk, cars, ro-ro, etc.), railway terminals and dry ports, road terminals, logistics centers and merchandise consolidation terminals.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Hours medium group</td>
<td>30,0</td>
<td>20.00</td>
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<tr>
<td>Self study</td>
<td>84,0</td>
<td>56.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Guided activities</td>
<td>6,0</td>
<td>4.00</td>
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Total learning time: 150 h
CONTENTS

The general framework of the transport system

Description:
Concept. Analysis models. Data and information collection.
Analysis of real implantations
Classification and cost models. Monopoly, competition and collaboration of operators.
Analysis of real implantations
Policies in Spain and Europe. Investment evaluation and profitability.
Analysis of real implantations
Public and private services. Relations between public administrations and service provider companies.
Analysis of real implantations

Specific objectives:
Introduce the student in the analysis of transport demand
Present the applied aspect of the implantations regarding transport systems
Introduction to transportation economics
Present the applied aspect of the implantations regarding transport systems
Analysis of planning criteria for transport systems and infrastructure
Present the applied aspect of the implantations regarding transport systems
Description of current management policies for transport systems
Present the applied aspect of the implantations regarding transport systems

Full-or-part-time: 57h 35m
Theory classes: 12h
Practical classes: 12h
Self study : 33h 35m
**Modes of transport**

**Description:**
Infrastructures and terminals. Vehicles and auxiliary elements for loading and unloading.

**Specific objectives:**
Introduction to the necessary elements for the provision of this type of transport.
Present the applied aspect of the implantations regarding transport systems
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**Full-or-part-time:** 86h 24m
Theory classes: 18h
Practical classes: 18h
Self study: 50h 24m

**GRADING SYSTEM**

The mark of the course is obtained from the ratings of continuous assessment and their corresponding laboratories and/or classroom computers.

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 teachings of the laboratory grade is the average in such activities.

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.

**EXAMINATION RULES.**

Failure to perform any activity or the continuous assessment of coursework in the selected period will be considered as zero score.
BIBLIOGRAPHY

Basic:

Complementary: