COURSE PROGRAM

Academic Year: 2024/2025

Identification and characteristics of the course				
Code	500973		ECTS Credits	6
Course name (English)	**TRANSPORTATION AND LAND USE PLANNING**			
Course name (Spanish)	Transporte y territorio			
Degree programs	Degree in Civil Engineering – Mention in Transport and Urban Services			
Faculty/School	School of Technology			
Semester	7	Type of course	Compulsory	
Module	Specific Technological Training in Transport and Urban Services			
Matter	Urban planning			
Lecturer/s				
Name		Office	E-mail	Web page
Montaña Jiménez Espada		Road Engineering Laboratory	mjespada@unex.es	http://www.unex.es/conoce-la-uex/centros/epcc
Subject Area	Transport engineering and infrastructure			
Department	Construction			
Coordinating Lecturer (If more than one)				

Competencies*
1. General: GC1, GC2, GC3, GC6, GC7 and GC8.
2. Transversal: CT1, CT2, CT3, CT4, CT5, CT6, CT7 and CT17.
3. Specific: CES1, CES2, CES3, CES4, CES5, CES6, CES7, CES8, CES9
4. Core CB1 - That students have demonstrated possession and understanding of knowledge in an area of study which builds on the foundation of general secondary education, and is usually at a level which, while relying on advanced textbooks, also includes some aspects which involve knowledge from the cutting edge of their field of study. CB2 - Students are able to apply their knowledge to their work or vocation in a professional manner and possess the competences usually demonstrated through the development and defence of arguments and problem solving within their field of study.

* The sections concerning competencies, course outline, educational activities, teaching methodologies, learning outcomes and assessment systems must conform to that included in the ANECA verified document of the degree program.

CB3 - Students have the ability to gather and interpret relevant data (usually within their area of study) in order to make judgements that include reflection on relevant social, scientific or ethical issues.
CB4 - Students are able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
CB5 - That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Contents

Course outline*

The general objective of this subject is to introduce the student to the knowledge of the elements, interrelationships and processes that configure transport as a dynamic, complex and reticular system.
In order to achieve this objective, we will begin with a conceptual approach to territorial planning and analysis, describing the techniques of analysis, strategies and territorial policies, analysing the mechanisms of location of activities and settlements in the territory.
The second part of the course will be devoted to introducing students to the world of transport as a structuring element of the territorial system. Students will be introduced to the role of transport networks and nodes; urban and interurban transport; initiating them in the analysis of transport demand and its modelling.

Course syllabus

Name of Lesson 1: Introduction and history of transport.
Contents of lesson 1: Definition of transport, legislation, objectives, basic concepts and specific aspects. The Roman domination of the peninsula, the Middle Ages, the Modern Age, the XIX-XXI centuries. Conceptual evolution and forecasts in the transport sector.
Name of Lesson 2: Transport and its relevance in the social economic context.
Contents of lesson 2: Externalities of transport systems. Energy, air pollution, delays, road safety; Evaluation of external costs.
Name of Lesson 3: Investments in transport infrastructures.
Contents of lesson 3: Financial, economic and social profitability criteria; Selection of actions; Financing of infrastructures. Fare policy.
Name of Lesson 4: Modes of transport.
Contents of lesson 4: Road, rail, maritime, air and pipeline transport.
Name of Lesson 5: Transport demand.
Contents of lesson 5: Objective of demand analysis; Mobility of passengers and goods. Survey modalities; Analysis of potential demand: Models. Classification. Elementary models. Factors and variables affecting demand. Zoning of the study territory; Models in passenger transport. Trip attraction and generation variables. Formulation of some models.
Name of Lesson 6: Logistics and transport in the EU.
Contents of lesson 6: Principles of logistics. Concept. Configuration of an efficient transport network. Multimodal transport chains; Logistics models: warehouses and transport of goods; Logistics centres. Concept and necessity. Economic effects: centrality, macroscopic and microscopic accessibility. Design bases: surface area, location, industrial land supply, potential market, environmental impact. Recommendations on implementation; Integrated logistics: management of the flow of information associated with goods by means of new communication technologies.
Name of Lesson 7: Intermodality.

Contents of lesson 7: Definition, characteristics and development framework. Need for coordination between modes of transport. Concepts and key factors of intermodality.

Name of Lesson 8: Sustainable transport, public participation and social perspective.

Contents of lesson 8: Buchanan Report, development and sustainability, challenges to manage mobility, urban environment strategy and public participation.

Name of Lesson 9: Urban planning and mobility.

Contents of lesson 9: Urban mobility, city-mobility relations, sustainable urban mobility plans.

Name of Lesson 10: Introduction to spatial planning.

Contents of lesson 10: Territorial problems and processes; its interdisciplinary nature; The concept of Spatial Planning; The Plan as an instrument of territorial planning.
The Plan as a basic instrument of Spatial Planning; The main stages in the formulation of a Territorial Plan; Types of Plans.
Plans.

Name of Lesson 11: Legal framework of spatial planning in Spain and the EU.

Contents of lesson 11: The territory as a system; The "Territorial Model". Components; Analysis techniques. Instruments and sources; Territorial diagnosis: its phases; Territorial strategies and policies. Prospective techniques.

Name of Lesson 12: City systems.

Contents of lesson 12: Classical theories of the spatial organisation of settlements. Evolution; Hierarchy of cities. The importance of medium-sized cities; Urban networks and spatial articulation; The Spanish System of Cities.

Educational activities *

Student workload in hours by lesson		Lectures	Practical activities				Monitoring activity	Homework
Lesson	**Total**	**L**	**HI**	**LAB**	**COM**	**SEM**	**SGT**	**PS**
1	12,5	5						7,5
2	12,5	5						7,5
3	12,5	5						7,5
4	12,5	5						7,5
5	12,5	5						7,5
6	12,5	5						7,5
7	12,5	5						7,5
8	12,5	5						7,5
9	11,5	4						7,5
10	11,5	4						7,5
11	11,5	4						7,5
12	11,5	4						7,5
Assessment **	4	4						
TOTAL	**150**	**60**						**90**

L: Lectures (85 students)
HI: Hospital internships (7 students)
LAB: Laboratory or field practices (15 students)
COM: Computer room or language laboratory practices (20 students)
SEM: Problem classes or seminars or case studies (40 students)
SGT: Scheduled group tutorials (educational monitoring, ECTS type tutorials)
PS: Personal study, individual or group work and reading of bibliography

** Indicate the total number of evaluation hours of this subject.

Teaching Methodologies*

Lecture and exercise resolution with active student participation.
Personalised explanation in small groups of the knowledge and applications shown in the theory and problem classes. Visits.
Personalised monitoring of student learning.
Individualised study of the theoretical and practical knowledge taught.
Development in the laboratory, computer room, field, etc. of practical cases.
Search for information prior to the development of the subject or complementary information once the activities have been carried out.

Learning outcomes *

The general objective of this subject is to introduce the student to the knowledge of the elements, interrelationships and processes that configure transport as a dynamic, complex and reticular system. In order to achieve this objective, we will begin with a conceptual approach to territorial planning and analysis, describing the techniques of analysis, strategies and territorial policies, analysing the mechanisms of location of activities and settlements in the territory.
The second part of the course will be devoted to introducing students to the world of transport as a structuring element of the territorial system.
Students will be introduced to the role of transport networks and nodes; urban and interurban transport; initiating them in the analysis of transport demand and its modelling. Intermodal Connection Infrastructures: Introduction to intermodal connection infrastructures on a general level, as well as studying a particular case that will help them to affirm what has been taught in class.

Assessment systems *

The **continuous evaluation** of the student's use of the course taught will be verified through the following means:

- Record of voluntary monitoring and attendance at the theory classes given.
- Taking a written exam at a regular exam session.
- Submission of assignments.

At the end of the course, each student will receive a grade between 0 and 10 maximum points, made up of the following sections:

Voluntary class attendance.	Maximum grade 1.0 points.
Presentation of work.	Maximum grade 3.0 points.
Compulsory Final Examination of the course.	Maximum grade 6.0 points.

The course will be considered passed with a grade equal to or higher than 5 points.

It will be necessary to have obtained a minimum mark of 3 (out of 10) in the subject exam in order to apply the following formula:

FINAL GRADE = (0.60 x EXAMINE GRADE) + (0.30 x END OF COURSE WORK) + (0.10 x PARTICIPATION AND ATTENDANCE IN CLASSES, TUTORIALS AND PRACTICALS) ≤ 10

Voluntary class attendance.

At the beginning of each teaching session, and not necessarily in all of them, a dated sheet will be handed out where the student must write his/her name and signature. Depending on the number of attendances, an additional mark may be obtained, which will correspond to the objective of reaching the percentage of attendance established by the teacher in view of the development of the course (between 90% and 75%).

Presentation of assignments.

These assignments will be related to the content of the course. The task to be carried out will be agreed with the teacher at the beginning of the course. The lecturer will guide the student with regard to the development of the work throughout the semester. The work will be defended in a public exhibition in class at the end of the semester, being evaluated and added to the final grade of the course up to a maximum of 3.0 points.

The final exam of the course is compulsory.

In order for the grade obtained in the written exam to contribute to the final grade of the subject, it must be higher or equal to 3 points out of 10. Normally, this test is organised in the following parts:

- Evaluation of theoretical knowledge. Where it is only necessary to have the means of writing.
- Theoretical-practical tests. Where a calculator and drawing tools will also be available.

In the case of **global assessment**, the student will only have to sit the final exam of the subject, which is compulsory.

According to the RESOLUTION of 25 November 2016 of the Management (DOE No. 236), the subject will include an alternative final exam of a global nature for all the exam sessions, so that passing it will mean passing the subject. The choice between the continuous assessment system or the assessment system with a single overall final exam is up to the student during the first three weeks of each semester.

The student shall inform the lecturer in writing of the type of assessment chosen during the first three weeks of each semester and the lecturer shall send the corresponding report to the Quality Committee. If a student fails to do so, it will be understood that he/she chooses continuous assessment. Once the type of assessment has been chosen, the student will not be able to change it in the ordinary call of that semester and will abide by the assessment regulations for the extraordinary call.

Bibliography (basic and complementary)

Basic bibliography

1) TRANSPORT, An integral approach. Rafael Izquierdo
2) PITVI, September 2012, Initial document for institutional presentation and public participation.
3) Spatial Planning Law of Extremadura.

4) Other bibliographical references and regulations on the subject will be provided to the student by the teacher. The Virtual Campus of the UEX will preferably be used as a means of providing the student with didactic resources.

Complementary bibliography

+ Other bibliographical references and regulations on the subject that will be provided to the student by the lecturer.

The UEX Virtual Campus will preferably be used as a means of providing students with teaching resources.

Other resources and complementary educational materials
The virtual campus will be used to provide students with information related to the subject: topics, related bibliography, teaching resources, updated regulations, links to websites of interest related to the subject, practicals, exams from previous years, students' work from previous years, etc.