



## COURSE DESCRIPTION INTELLIGENT TRANSPORTATION SYSTEMS

# SSD: TRASPORTI (ICAR/05)

DEGREE PROGRAMME: TRANSPORTATION ENGINEERING AND MOBILITY (P55) ACADEMIC YEAR 2022/2023

# **COURSE DESCRIPTION**

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# **GENERAL INFORMATION ABOUT THE COURSE**

INTEGRATED COURSE: NOT APPLICABLE MODULE: NOT APPLICABLE CHANNEL: FG A-Z YEAR OF THE DEGREE PROGRAMME: I PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II CFU: 9

## **REQUIRED PRELIMINARY COURSES**

None

PREREQUISITES

None

## **LEARNING GOALS**

The course provides students with theoretical and technical skills concerning emerging technologies applied to monitoring, management and control of transportation systems.

## **EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)**

#### Knowledge and understanding

The student must demonstrate his/her knowledge and understanding of the issues related to the design, implementation and operation of technological systems for monitoring and improving transport systems functioning.

#### Applying knowledge and understanding

The course is aimed at transmitting the methodological and operational skills and tools (e.g. development of traffic simulation scenarios and analysis of the data produced by them) necessary to concretely apply these knowledges.

#### **COURSE CONTENT/SYLLABUS**

Preliminary recall of key concepts of transportation systems engineering
Transportation systems monitoring techniques
Introduction to Intelligent Transport Systems (ITS)
Connected Vehicle technologies (V2V, V2I). Advanced Driving Assistance Systems (ADAS) and Cooperative Connected and Automated Mobility (CCAM)
Travel Demand Management
Advanced Traveller Information Systems
Key concepts of public transport modelling
Fundamentals for Advanced Traffic Management Systems
Urban traffic control
Motorway traffic control
Shared Mobility.

#### **READINGS/BIBLIOGRAPHY**

Slides, lecture notes, technical papers.

#### **TEACHING METHODS OF THE COURSE (OR MODULE)**

Lectures, interactive tutorials, laboratory activities and case studies, project development, learning-by-doing and challenge-based learning.

#### **EXAMINATION/EVALUATION CRITERIA**

## a) Exam type

- Written
- 🗹 Oral

Project discussion

Other

#### In case of a written exam, questions refer to

Multiple choice answers

Open answers

Numerical exercises

#### b) Evaluation pattern