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
•Mobility as a Service
•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