



COURSE DESCRIPTION TRANSPORT PLANNING AND APPRAISAL

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: II PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I CFU: 9

REQUIRED PRELIMINARY COURSES

NONE

PREREQUISITES NONE

LEARNING GOALS

The course aims to provide general knowledge about the transport planning process considering its several phases, including recognising critical aspects in a transport system, defining goals and targets, identifying different solutions and scenarios and carrying out evaluations. Methods and algorithms for the transportation system simulation in several scenarios, theoretically treated in other courses, are introduced from an application standpoint. The course focuses on the leading indicators to be estimated to address the evaluation of a project and/or a plan concerning environmental and other "external" aspects. The main comparison and evaluation techniques, as cost-benefits analysis and multicriteria analysis, are presented and applied to a case study.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Students acquire knowledge about steps for planning a transportation system, i.e. the steps necessary to define the process by which decisions can be made (including not deciding) considering the impacts these can have on the community, the territory and the environment. The interventions to be implemented on a transportation system are functional to the achievement of given objectives, considering the constraints and the points of view of the decision makers and the subjects involved (to take the best decision). Decisions, and the related objectives and constraints, can be taken by public subjects operating for the community or by subjects operating in private companies (different points of view).

Applying knowledge and understanding

Students should demonstrate to be able to draw the consequences of a set of information related to the principles, strategies and methodologies underlying the sustainable planning of interventions (physical, organizational and managerial) on the passenger and freight of the transport system. Students are provided with a new vision of transport systems engineering conceived no longer as aimed only at the construction of new infrastructures but also as a discipline aimed at satisfying the current needs of management and maintenance of transport systems and infrastructures. In addition, the issues addressed, updated according to the recent regulatory framework, and the planning procedures presented are applicable to any type of planning of public utility works that are carried out by private individuals or by the public administration.

COURSE CONTENT/SYLLABUS

- Transpotation system definition
- The Transport Planning Process 3.0
- Public Engagement
- Activities and competences in the planning process
- Rules and planning documents
- Transportation impacts estimate
- Environmental impacts
- Economic-Financial analysis
- Multi-Criteria Analysis

READINGS/BIBLIOGRAPHY

Slides, lecture notes, technical papers. Textbooks: Transportation Systems Engineering Theory and Methods –Ennio Cascetta - Springer Cartenì, A. (2017); Processi decisionali e Pianificazione dei trasporti, Lulu International. ISBN 978-1-326-46240-6 Slide del corso fornite allo studente

TEACHING METHODS OF THE COURSE (OR MODULE)

80% of the course will be made with front lectures, the remaing with an exercise part

EXAMINATION/EVALUATION CRITERIA



Open answers

Numerical exercises

b) Evaluation pattern