Advanced design of transport infrastructures

Marco Pasetto and Giovanni Giacomello

Program:
Basics of transport infrastructures design. Standards and design software. Fundamentals of Infrastructure Building Information Modeling (I-BIM). Elements of vehicles mechanics, analysis of vehicle-infrastructure interaction and safety of transport infrastructures. Study of infrastructures behavior, definition of components and evaluation of materials properties. Construction, management and maintenance of infrastructures. Finite element modeling of transport infrastructures and analysis of the stress-strain state in the infrastructure components (with numerical application and examples). Elements of maintenance techniques and analysis of life cycle assessment for transport infrastructures. Introduction to advanced tests to characterize the infrastructure materials.

References:

- Santagata, F. A., Pasetto, M., Pasquini, E. et al., Strade - Teoria e tecnica delle costruzioni stradali. Milano: Pearson, 2016. vol. 2
- Nikolaides, A., Highway engineering - Pavements, materials and control of quality. Boca Raton: CRC Press - Taylor and Francis Group, 2015
- Papagiannakis, A. T and Masad, E. A, Pavement Design and Materials. New York: Wiley, 2017.
- Fwa, T. F., The handbook of highway engineering. Boca Raton: CRC Press, Taylor & Francis Group, 2006

Examination and grading:
Oral examination at the end of the course, checking on completeness and suitability of knowledge.

Course details:
Course offered in-person. Room and hours will be defined after knowing the number of students interested in course. Class method: Frontal lecturing, using blackboard and video projector.