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CIVIL AND ENVIRONMENTAL ENGINEERING

DOCTORAL PROGRAM 2024-2025



Alessandro Corradini is an Assistant Professor in the field of Roads, Railways and Airports at the University of Perugia, Department of Civil and Environmental Engineering, where he currently teaches Management of Road Infrastructure and Design of Road Infrastructure.

He received his Ph.D. in Civil Engineering from University of Perugia in 2016. Dr. Corradini has been the supervisor of the experimental activity at the Testing Material Laboratory - Infrastructure Section of University of Perugia since 2016. His research is mainly focused on the performance characterization of pavement materials, with a particular emphasis on material recycling, sustainable soil stabilization practices, innovative mixtures and technologies.

Course Schedule (18 hours, 3 CFU)

October 10th, 09:30 – 13:30

October 14th, 09:30 – 13:30

October 17th, 09:30 – 13:30

October 21st, 09:30 – 13:30

October 24th, 09:30 – 11:30

Location

Auletta, Campus of Engineering of University of Perugia, Via G. Duranti, 93 - Perugia

For more info Mrs. Teresa Nocera, Ph.D. Program Secretariat (teresa.nocera@unipg.it)
Prof. Dr. Filippo Ubertini, Ph.D. Program Coordinator (filippo.ubertini@unipg.it)

WASTE MATERIALS FOR SUSTAINABLE ROAD CONSTRUCTION

Instructor

Alessandro Corradini, Ph.D.,
Assistant Professor, University of Perugia

Course Description

The course, following a concise introduction to the fundamental principles of road pavement construction, provides an in-depth examination of the principal categories of recycled materials and their potential applications within pavement layers, positioning them as sustainable and technically viable alternatives to conventional materials. Particular emphasis is placed on the characterization of construction technologies designed for the development of sustainable pavements, with specific research attention devoted to the assessment of both material performance and environmental impact.

The teaching program integrates theoretical perspectives with applied approaches, addressing a wide range of construction practices, including:

- subgrade stabilization through different types of biomass ashes;
- development of sub-base layers employing recycled aggregates;
- cold recycling techniques with reclaimed asphalt pavement (RAP) combined with bio-based rejuvenators;
- incorporation of bio-binders and selected waste materials into asphalt concrete mixtures for binder and wearing course layers of road pavements.



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