

Rheology of viscoelastic materials

Professor

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Institution

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General Information

Description

The aim of the lectures is to introduce the basic principles of rheology as they apply to viscoelastic materials and in particular to asphalt binders, introduce measurement principles and analytical concepts, and provide a hands-on experience in the laboratory that is closely integrated with the classroom work. The most used rheological models will be presented and evaluated.

The lectures will be held in presence in Pisa and in English.

Course Contents include:

- Introduction to rheology / basic principles
- Rheology of visco elastic materials and in more details for asphalt binders
- Hands-on laboratory sessions
- Handling of materials in the laboratory
- Analysis and interpretation of laboratory data
- Errors in rheological measurements
- Use of rheological data in asphalt binder specification in U.S. and Europe
- Rheology and relationship to performance with a special focus on asphalt binders
- Rheological models

Schedule

Dates

Description

10/02/2025 (from 10.00 to 12.00)

Introduction to rheology / basic principles

12/02/2025 (from 10.00 to 12.00)

Rheology of visco elastic materials and in more details for asphalt binders

Dates	Description
17/02/2025 (from 10.00 to 13.00)	Hands-on laboratory sessions
24/02/2025 (from 9.00 to 13.00)	Handling of materials in the laboratory
03/03/2025 (from 9.00 to 13.00)	Tests in laboratory and analysis and interpretation of laboratory data
10/03/2025 (from 9.00 to 13.00)	EU and US Standard specifications about asphalt binders and Rheological models
Total 18 Hours - 3 Credits	

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