

## International Doctorate in Civil and Environmental Engineering

DOCTORAL SEMINAR

# Dynamic Soil-Structure Interaction

Teacher: Eng. PhD. **Stefano Renzi**

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### Calendar

Monday, November 14 2022 9:30-13:30, Santa Marta – Sala Caminetto	Introductory overview; kinematic and inertial Soil-Structure Interaction. Simplified criteria of modeling dynamic springs and dampers.  Effects of dynamic Soil-Structure Interaction in buildings during earthquakes. SSI: beneficial or detrimental? Case studies. Dynamic Soil-Structure Interaction approach in EC8 and Italian Technical Regulation (NTC2018).  Results of parametric analyses, case studies and examples.
Total	4 hours – 1 credits

### Program

Due to evidence of historical earthquakes, the importance of achieving an acceptable level of safety for ordinary shear-type buildings, as “element at risk”, is undisputed. It is also well known that seismic Soil-Structure Interaction (SSI) can play a relevant role even if the issue is not free from misconceptions. The dynamic response of a structure supported on soft soil may differ substantially in amplitude and frequency content from the response of an identical structure founded on firm ground.

This course will provide a technical overview of the concepts and the effects of dynamic Soil-Structure Interaction on buildings founded on superficial and deep foundations. Conceptual frameworks and operational methods will be illustrated as well as case-study applications and technical international regulations.