

International Doctorate in Civil and Environmental Engineering

DOCTORAL COURSE

Dynamic Soil-Structure Interaction

Teacher: Dott. **Stefano Renzi**

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Calendar	
30/03/2020, 10,00-13,00 – Room to be defined - S. Marta – UniFi	Introduction to Dynamic Soil-Structure Interaction. Inertial and Kinematic interaction.
06/04/2020, 10,00-13,00 – Room to be defined - S. Marta – UniFi	Effects of Dynamic Soil-Structure Interaction on seismic behavior of structures. Case histories and examples. Technical approaches on EC8 and Italian Building Code (NTC18).
14/04/2020, 10,00-12,00 – Room to be defined - S. Marta – UniFi	Practical exercises using simplified methods proposed in literature.
Total	8 hours – 4 credits

Program
<p>When subjected to dynamic loads, foundations oscillate in a way that depends on the nature and deformability of the supporting ground, the geometry and inertia of the foundation and superstructure, and the nature of the dynamic excitation. Such an excitation may be in the form of support motion due to waves arriving through the ground for example during an earthquake.</p> <p>For structures founded on rock or very stiff soils, the foundation motion is essentially that which would exist in the soil at the level of the foundation in the absence of the structure and any excavation; this motion is denoted as free-field ground motion. For soft soils, the foundation motion differs from that in the free-field due to the coupling of the soil and structure during the earthquake. It is widely recognized that 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 supported on firm ground.</p>