

The influence of the ductility on the structural response of Steel and RC structures

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General Information

In design of moment resisting frame structures for seismic loads and static gravity loads, ductility is as important as the strength. Plastic analysis, taking advantage from the redistribution of moments, allows for the load-carrying capacity of the structure to increase, leading to a more efficient use of the material. Regarding seismic action, earthquake resistant structures may be designed with a dissipative structural behavior, where the dissipative capacity may be considered explicitly through a non-linear analysis or implicitly through a linear elastic analysis, under a reduced elastic response spectrum scaled by the seismic behavior factor. In both cases, members, which are designed to undergo plastic deformation, need to provide the required ductility, exploiting the effective plastic rotation of sections. The influence of the ductile behavior of structural members, as impacted by structural details, on the structural response of steel and Reinforced Concrete structures, is investigated in the course.

Schedule

Dates	Description
09/04/2023 – 10:00-13:00	The ductility of the material, cross-section, and structural element
16/04/2023 – 10:00-13:00	The effective ultimate load of structures as impacted by the rotation capacity
23/04/2023 – 10:00-13:00	Code requirements on the “capacity design” and recent developments
Total 9 Hours – 1.5 Credits	

Other information

The course will be held online.

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