



PhD in INGEGNERIA STRUTTURALE, SISMICA, GEOTECNICA / STRUCTURAL SEISMIC AND GEOTECHNICAL ENGINEERING - 40th cycle

THEMATIC Research Field: STRUCTURAL, SEISMIC AND GEOTECHNICAL ENGINEERING

Monthly net income of PhDscholarship (max 36 months)

€ 1300.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

The fields of structural, seismic, and geotechnical engineering play a fundamental role in addressing the complex challenges associated with modern infrastructures, resilience to natural hazards, and sustainable engineering solutions. Research objective will then focus on contributing to the development of innovative analytical, computational and experimental tools that enhance the understanding and prediction of structural behavior across various scales, materials and environmental conditions. The interdisciplinary nature of the ISSG PhD program encompasses material science, geotechnics, and computational mechanics, providing a unique opportunity to advance both theoretical models and practical applications to improve design reliability, optimize material use, and enhance structural safety and durability.

The research activities will focus also on the interactions between structures and the environment, addressing both natural and anthropic influences such as seismic events, extreme weather conditions, and long-term material degradation. The outcomes will not only benefit traditional civil engineering applications, but also extend to biomaterials, metamaterials, and microsystems, fostering cross-disciplinary advancements in engineering.

Methods and techniques that will be developed and used to carry out the research

To achieve the objectives, the research can employ a combination of theoretical modelling, numerical



	simulations, and experimental investigations. Advanced computational methods may include FEM, DEM, multiscale modelling as well as machine learning data-driven techniques, applied at both the structural and material level.
Educational objectives	The ISSG PhD program in Structural, Seismic aims to equip researchers with advanced knowledge and interdisciplinary skills necessary to address complex engineering challenges, in the context of both computational and experimental methods. In particular, researchers in the ISSG program will be able to integrate principles from civil engineering, material engineering, and computational mechanics to address real-world engineering problems, developing solutions that enhance infrastructure sustainability, durability, and resilience against natural and anthropogenic hazards.
Job opportunities	A PhD in Structural, Seismic, and Geotechnical Engineering opens up diverse career opportunities in academia, industry, consulting engineering firms, research institutions, and government agencies.
Composition of the research group	20 Full Professors 25 Associated Professors 13 Assistant Professors 83 PhD Students
Name of the research directors	D. Coronelli, M. Cremonesi, G. Della Vecchia

Contacts	
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad



Amount monthly	650.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information

Educational activities (purchase of study books and material, funding for participation to courses, summer schools, workshops and conferences): financial aid per PhD student per year The Ph.D. course supports the educational activities of its Ph.D. students with additional funding equal to 10% of the scholarship, starting from the first year.

Teaching assistantship: availability of funding in recognition of support to teaching activities by the PhD student There are various forms of financial aid for activities of support to the teaching practice. The PhD is encouraged to take part in these activities, within the limits allowed by the regulations.

Computer availability: Each Ph.D. student has his/her own computer for individual use.

Desk availability: Each Ph.D. student has his/her own desk, cabinet and locker.