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PhD School - Politecnico di Milano

Regulations of the PhD Programme in:

Structural, Seismic and Geotechnical Engineering

Cycle XXXIX

1. General Information

PhD School - Politecnico di Milano

PhD Programme: Structural, Seismic and Geotechnical Engineering

Courses start: September 12, 2023

Location of the PhD Programme: Milano Leonardo

Promoter Department: Department of Civil and Environmental Engineering

Scientific Disciplinary Sectors:
- ICAR/07 – Geotechnics
- ICAR/08 – Structural Mechanics
- ICAR/09 – Structural Engineering

PhD School Website: https://www.dottorato.polimi.it/en/
PhD Programme Website: https://www.dica.polimi.it/phd/?lang=en

2. General presentation

Structural, Seismic and Geotechnical Engineering (SSGE) encompasses those disciplines and techniques that allow to understand, model and control the behaviour of structural materials, soils, components and buildings, together with their interaction with the environment. This is a highly inter-disciplinary field, deeply rooted in Civil Engineering, but with relevant industrial applications as well: the theoretical and applied study of materials and structures goes along with the analysis of the interaction of the structure with the environment, ensuing from either natural or anthropic activities. Because of their generality, the methods developed in SSGE are fundamental also in other technical-scientific areas, whenever understanding and controlling mechanical aspects is necessary to guarantee both design reliability and structural safety, serviceability as well as durability.
The PhD course is run by a Coordinator and a Faculty Board.
The Coordinator chairs the Faculty Board, coordinates the preparation of the annual Educational Programme and organises the general educational activities of the PhD course (see Attachment A1).
The Faculty Board is responsible for the Educational programme and for teaching and administrative activities related to the PhD course (see Attachment A2).

3. Objectives

Within the context outlined above, the primary objective of this PhD programme is to improve the advancement of knowledge with reference to: (a) innovation in materials and structures and in the methods for the mathematical modelling of their response; (b) safety of structures and infrastructures under design actions and effects, extreme static/dynamic actions and against the deterioration due to

the structure lifecycle, together with the development of simulation methods for the analysis of their response; (c) geomaterials, soil-structure-groundwater interaction and underground structure stability. This objective is pursued within the framework of the research activities carried out at the Department of Civil and Environmental Engineering of Politecnico di Milano. For this purpose, PhD candidates are given advanced, research-oriented training, based on the pivotal role of Structural Engineering and on the multi-disciplinary nature of Seismic and Geotechnical Engineering. More specifically, the 3-year curriculum of the PhD programme in Structural, Seismic and Geotechnical Engineering aims at providing the following professional skills that will be developed to a greater or lesser extent according to the interests of the candidate:

(a) Basic and operative knowledge of the principal, up-to-date methods used in computational mechanics, in order to model and analyse the elastic, inelastic and cyclic behaviour of materials and structures;

(b) Critical understanding and conscious use of numerical codes, depending on the level of the analysis (micro-, meso- and macro-structural levels);

(c) Basic and operative knowledge of experimental mechanics, including the most advanced experimental techniques and their instrumentation, in order to test materials, structures and soil, either in a laboratory or on site;

(d) Knowledge of the most common procedures for test-based identification of parameters characterizing the mechanical properties of materials and for the identification of structural damage (for the assessment of structural safety);

(e) Exploitation of artificial intelligence tools, specifically machine and deep learning, for feature extraction and decision making, regarding the health monitoring of civil structures and infrastructures, even in the case of uncertain input loading;

(f) Basic and operative knowledge of the design criteria and socio-economic implications governing any major structural project.

4. Professional opportunities and job market

The high-level education offered by the PhD programme in Structural, Seismic and Geotechnical Engineering allows PhDs to continue their activity along three paths: (a) in the academic field; (b) within other public or private research institutions or companies with a focus on research and development, in the fields of Civil and Environmental Engineering and Industrial Engineering; (c) professional activities, typically as an independent self-employed professional, in a design office, engineering companies or as a high-level consultant, mainly as a structural analyst or in the field of advanced structural design and monitoring.

The inter-disciplinary approach of the PhD programme allows to exploit the experience gained during the study period in different areas: from the design of large infrastructures to the preservation and restoration of monumental and architectonical heritage, from seismic design to geostructure stability, not to mention the many issues in common with several branches of Industrial Engineering (mechanical, aerospace, nuclear and bioengineering).

5. Enrolment

5.1 Admission requirements

Italian and International citizens can apply. They are requested to have graduated in accordance with the pre-existing laws D.M. 3.11.1999 n. 509, or to have a Master of Science degree in accordance with D.M. 3.11.1999 n. 509, or a Master of Science in accordance with D.M. 22.10.2004 n. 270, or similar academic title obtained abroad, equivalent for duration and content to the Italian title, with an overall duration of university studies of at least five years.
The certified knowledge of the English language is a requirement for admission. Please refer to the PhD School website for details.
Admission to the programme follows the evaluation of the candidates' curricula, their motivation letter and their report on the development of a hypothetical PhD research in one of the topics addressed in the call for admission, to be submitted contextually with their application.

5.2 Admission deadlines and number of vacancies

The number of positions is indicated in the Call for admission to the 39th PhD cycle Programmes: https://www.dottorato.polimi.it/en/
Scholarships both on general and on specific themes are available, as stated in the call for admission.

6. Contents

6.1 Requirements for the PhD title achievement

The achievement of the PhD title in Structural, Seismic and Geotechnical Engineering requires a study and research activity of at least the equivalent of three years of full-time study, research and development of PhD thesis.
PhD candidates in Structural, Seismic and Geotechnical Engineering must earn a minimum of 25 course credits (see paragraph 6.3 below), and continuously conduct studies and research.
In addition, candidates should attend seminar activities organized by the Department, according to the rules defined by the Faculty Board.
At the beginning of the course, the Faculty Board assigns a tutor to each PhD candidate to advise and assist her/him throughout the overall training programme. The tutor to be a professor belonging to the Faculty Board. The tutors assist the candidates in the choice of courses to be included in the study plan, which is eventually submitted for approval to the Coordinator of the PhD Programme (see also section 6.4 below).
The Faculty Board may assign extra course credits to one or more candidates, in case they need to complete their preparation in specific topics, relevant for their research projects.
Candidates will be asked to demonstrate knowledge of the Italian language, equal to at least A1 level of the Common European Framework of Reference for the knowledge of languages. This requirement will be needed in order to register for the final exam. Italian native speakers and all those who can demonstrate knowledge of the Italian language to the required level will be exempt.

6.2 Research development

The main aim of all Politecnico di Milano PhD programmes is to develop a research-oriented mind-set in the candidates, with expertise and skills in a specific research topic. To this end, candidates develop a problem-solving capability in complex contexts, including the capacity to perform deep problem analysis, identify original solutions, and evaluate their applicability in practical contexts.
These skills provide the PhD candidates with greater opportunities of development in their research

both in the academic field, and in public and private organisations.
PhD candidates are requested to develop an original research contribution. The PhD thesis must thus contribute to increase the knowledge in the candidate's research field. Besides, being consistent with the research topics developed in the Department where the PhD Programme is carried out.
The original research results are collected in the PhD thesis, where the candidate's contribution is framed in a perspective with respect to the state of the art in the specific research field.
The PhD research is developed under the guidance of a supervisor, who supports the candidate in the definition of her/his objectives and in the everyday activities related to the thesis development. The supervisor is not necessarily a member of the Faculty Board and could belong to an institution other than the Politecnico di Milano. The supervisor may be supported by one or more co-supervisors.
Further activities intended to develop the candidate's personal skills and research expertise are encouraged during the PhD path.
Candidates must acquire the capability to present and discuss their work within their research community. Consequently, both the participation in international conferences and the publication of research results in peer-reviewed journals are encouraged.
The PhD programme favours the candidates' research interactions with other groups in their research community, preferably abroad. Research visits of at least three months are strongly encouraged, to help the candidates to acquire further skills for the development of their research work and thesis.
The duration of the programme is normally three years.

6.3 Objectives and general framework of the teaching activities

The PhD Programmes and the PhD School activate teaching forms of different kind, including courses, seminars, project workshops, laboratories. Teaching activities cover both basic research issues (problems, theories, methods) related to the PhD Programme, and specific research topics more directly connected with the students' theses.
Lectures are usually held in English, except when indicated otherwise. The PhD programme includes at least one complete path delivered in the English language.
Structured teaching activities allow to earn ECTS credits. Other scientific activities, more specialised and difficult to evaluate, are taken into account by the Faculty Board for the overall evaluation, but do not allow earning ECTS.
The table below summarizes the candidate's **activity plan** (coursework). At the same time, candidates should also focus on research under the direction of their supervisor as well as of the Faculty Board.
First/Second Year

<table>
<tr><th>Courses</th><th>Reference</th><th>Number of credits</th><th>Notes</th></tr>
<tr><td>PhD School Courses</td><td>https://www.dottorato.polimi.it/en/phd-school/phd-level-courses</td><td>At least 10</td><td rowspan="3">- At the beginning of the year, PhD students submit their study plan, which is subjected to the prior authorization of both the tutor and the Faculty Board.

- Changes of the study plan are allowed upon authorization of the Faculty Board.</td></tr>
<tr><td>Courses characterising the PhD programme</td><td>TABLE A</td><td rowspan="2">At least 15</td></tr>
<tr><td>Other PhD</td><td>Courses from other</td></tr>
</table>

courses	PhD programmes held at Politecnico or other scientific institutions		- Credits are earned only by passing the exam. - At least **15 credits** are required to proceed into the second year.

Third year

In the third year, the candidate's activity should be devoted entirely to research and to the development of the PhD thesis.

PHD SCHOOL COURSES

The PhD School of Politecnico di Milano offers a set of courses aiming to train the PhD candidates in soft and transferable skills. The skills and abilities provided by these courses are expected to help candidates across different areas of their careers in order to respond to the rapidly evolving needs of the global economy and society at large. The PhD School courses activated for the 2023-2024 Academic Year are summarized in the following table.

Professor	Course name
Aliverti Andrea	Ethics in Research
Armondi Simonetta	Strengthening Critical Spatial Thinking
Arnaboldi Michela	Advanced Interaction Skills for Academic Professionals
Biscari Paolo	English for Academic Communication
Biscari Paolo	Industrial Skills
Biscari Paolo	Scientific Communication in English
Brunetto Domenico Savio	Innovative Teaching Skills
Canina Maria Rita	Creative Design Thinking
Cardilli Lorenzo	European Culture
Di Blas Nicoletta	Professional Communication
Fuggetta Alfonso	Project Management Basics
Iarossi Maria Pompeiana	Power of Images and Visual Communication for Research Dissemination
Conci Claudio	Communication Strategies that Score In Worldwide Academia
Lavagna Monica	Sustainability Metrics, Life Cycle Assessment and Environmental Footprint
Mancini Mauro	Project Management (In Action)

Masarati Pierangelo	Ethical Aspects of Research on Dual-Use Technologies
Mauri Michele	Research Communication. Issue Mapping: Exploring Public Debates Surrounding Academic Topics
Oppio Alessandra	How To Support Complex Decisions: Approaches and Tools
Cuca Branka	The Copernicus Green Revolution for Sustainable Development
Paganoni Anna Maria	La Comunicazione nella Scienza
Pizzocaro Silvia Luisa	Practicing Research Collaboration
Parmeggiani Fabio	Science, Technology, Society and Wikipedia
Sancassani Susanna	Teaching Methodologies, Strategies and Styles
Biscari Paolo	Research Skills
Tanelli Mara	Cognitive Biases and Discriminations: Implications, Risks and Opportunities
Volonte' Paolo Gaetano	Introduction to Academic Research
Rawad El Skaf	Scientific Models: Conceptual Foundations and Philosophical Issues
Hesselbein Chris	Technology and Society
Canali Stefano	Philosophy of Science and Technology
Boeri Elisa	Recording Work 4 Building Memory: Methods, Practices, Tools, Skills to Manage the Knowledge
Colombo Emanuela	Science Diplomacy for Researchers. Filling the Gap between Science and Policy within the Global Challenges

At least 10 of the 25 course credits that each candidate is required to earn will be obtained through soft and transferable skills courses organized by the PhD School.

EVALUATIONS

After attending a course, PhD students should pass an exam, whose form (oral, written test or written essay) will be defined by the end of the course by the professor in charge.

COURSE PROGRAMMES

For information about the course programmes (content and calendar), please refer to
https://www11.ceda.polimi.it/manifestidott/manifestidott/controller/MainPublic.do?check_params=1&k_corso_la=1384&lang=EN&polij_device_category=DESKTOP&__pj0=0&__pj1=abcc846e9d0abdf0f7c88a6d6b009757
PhD programme Website:
https://www.dottorato.polimi.it/en/phd-programmes/engineering/structural-seismic-and-geotechnical-engineering

COURSES CHARACTERISING THE PHD PROGRAMME

The PhD Programme in Structural, Seismic and Geotechnical Engineering organises the Characterising Courses listed in table A. This list may change during the year. Additional courses may be attended by the students of the 39th cycle during their second year.

Table A: COURSES CHARACTERISING THE PHD PROGRAMME

Course name	Professor(s)	Credits
Advanced Topics in the Finite Element Method for Structural Analysis	Aldo Ghisi	5
Experimental Methods in Material and Structural Mechanics	Roberto Felicetti	5
Fibre reinforced concrete. Material characterization and structure design	Marco Di Prisco	5
Non-Linear Solid Mechanics	Anna Marina Pandolfi	5
Inverse Problems and Finite Element model updating	Roberto Fedele	5
Engineering models for Multiscale Soil-Structure Interaction problems	Andrea Galli	5
Multidisciplinary approach for the structural analysis of historic masonry buildings	Giuliana Cardani, Dario Coronelli	5
Elastic Wave Propagation with Applications to Earthquake Engineering	Paolucci Roberto	5
Computational Non-Linear Analysis of Concrete Structures	Biondini Fabio	5
Structural Health Monitoring Using Classic and Data Science Techniques	Alireza Entezami, Luca Martinelli	5
Patent landscape and patent prior-art search	Stefano Mariani	5

OTHER PHD COURSES

In addition and/or in alternative to those listed in Table A, students may attend PhD courses offered by other PhD programmes of the Politecnico and/or by external institutions, such as CISM (www.cism.it) or Rose School (www.roseschool.it). In this case, the prior approval of both the tutor and the Coordinator is mandatory.

Minimum requirements

1) The minimum number of credits to be acquired from the list in Table A of Courses Characterising the PhD Programme or from Other PhD Courses is 15. Master courses activated at the Politecnico di Milano can be assimilated to PhD courses provided that they belong to scientific areas not fully covered by the courses offered by the PhD Program in Structural, Seismic and Geotechnical Engineering. In which case, the proposed course must be approved by the Faculty Board.
2) The minimum number of credits to be acquired from the list of PhD School Courses is 10.
3) The minimum number of credits to be acquired in the first year is 15.

PREPARATORY COURSES (only if foreseen)

If the supervisor and the tutor find it useful or necessary for the candidate to attend preparatory

courses (chosen among the activated courses at the Politecnico di Milano), the Faculty Board of the PhD programme may assign some extra-credits to be acquired to complete the training path. Credits acquired in this way will be considered as additional to the mandatory credits specified above.

SPECIALISTIC COURSES, LONG-TRAINING SEMINARS

Attending special courses and summer schools is strongly encouraged. where they are certified and evaluated, attendance may allow students to obtain credits, as established by the Faculty Board and with prior approval of the study plan. Courses with certified attendance can be added to the study plan as optional "extra teaching activities", even if they are not evaluated and therefore cannot be qualified as credits.

Other courses may be activated during the year. In which case, the candidates will be promptly informed and will be allowed to insert these new courses in their study plan.

6.4 Presentation of the study plan

PhD candidates are required to submit a study plan, which may be revised periodically (approximately every three months) to add new courses or to reflect developments in their PhD career. The study plans must be approved by the PhD programme Coordinator, following the procedure established by the Faculty Board.

6.5 Yearly evaluations

Candidates present their work to the Faculty Board at least once a year. The candidates must pass an annual evaluation in order to be admitted to the following PhD year. The third year evaluation establishes the candidate's admission to the final PhD defence.

As a result of each annual evaluation, the candidates passing the exam receive an evaluation (A/B/C/D) and may proceed with the enrolment for the following year. Candidates who do not pass the exam are qualified either as "Repeating candidate" (Er) or "not able to carry on with the PhD (Ei)". In the former case (Er), the candidates are allowed to repeat the PhD year once at most. The PhD scholarships – if any – are suspended during the repetition year. In the latter case (Ei), the candidates are excluded from the PhD programme and lose their scholarships – if any.

In cases where the Faculty Board retains it appropriate to assign directly an exclusion evaluation (Ei) without a previous repetition year, the request must be properly motivated and validated by the PhD School.

After the final year, candidates who have achieved sufficient results but need more time to conclude their research work and write their theses may obtain the admission to a further year.

Candidates will be given guidelines by which to prepare their presentations for the yearly evaluations and the admission to the final exam.

6.6 PhD thesis preparation

The main objective of the PhD career is the development of an original research contribution, consistent with the research objectives of the Department where the PhD programme is developed. The PhD thesis is expected to contribute to the advancement of the knowledge in the candidate's research field. The originality of her/his work and its role for the improvement of the state-of-the-art should be highlighted in the candidate's thesis.

At the conclusion of the PhD studies, the Faculty Board evaluates the candidates. Candidates who receive a positive evaluation submit their theses to two external reviewers for refereeing. If the evaluation provided by the reviewers is positive (or after the revisions required by the external reviewers), the candidates defend their thesis in a final exam, in front of a Commission composed of at least three members (at least two of them must be external experts).

7. Laboratories, PhD Secretary Services

7.1 Experimental facilities

Advanced experimental research activities related to structures, materials and geotechnics are mostly supported by the Testing Lab for Materials, Buildings and Civil Structures (see website: http://www.lpm.polimi.it/), which is an officially accredited Lab for testing structures and structural elements with forces ranging from 0.01 to 5000 kN, as well as to conduct physical/mechanical tests on structural and geomaterials, both in standard and high-temperature conditions. Experimental facilities are also available on the Lecco Campus, and these are mainly devoted to the investigation of impact loads and advanced cementitious composites.
PhD students are strongly encouraged to perform experimental activities: the visits to the lab and the scheduled courses on Experimental Structural Mechanics serve this purpose.

7.2 Computational resources

PhD students have a personal computer for their own use.
For computing applications, a number of high-performance servers dedicated to PhD students is available. It is also worth mentioning that Politecnico di Milano is partner of the consortium CINECA (www.cineca.it), which hosts one of the most powerful supercomputers in the world.

7.3 PhD Secretary Services

Elena Raguzzoni
Department of Civil and Environmental Engineering
Tel: +39 02 2399.6504
e-mail: elena.raguzzoni@polimi.it

8. Internationalisation and inter-sectoriality

Conducting study and research activities in external laboratories is strongly recommended.
The Politecnico di Milano supports joint PhD paths with International Institutions, as well as Joint and Double PhD programmes. Further information is available on the PhD School website and on the PhD programme website.

More specifically, the PhD programme in Structural, Seismic and Geotechnical Engineering has established agreements of Double/Joint PhD Degree with the following institutions:

Université Paris-Saclay, Paris – France
Double PhD Degree

University Amrita Vishwa Vidyapeetham (AMRITA) – India
Double and Joint PhD Degree

Budapest University of Technology and Economics (BUTE) – Hungary
Joint PhD Degree.

Ghent University
Joint PhD Degree

University of Iceland
Joint PhD Degree

Scientific collaborations are also active with:

Joint Research Centre, Ispra – Italy
The PhD programme in Structural, Seismic and Geotechnical Engineering works together with the Ispra Joint Research Centre and, in particular, with the ELSA Lab (European Laboratory for Structural Assessment). Several PhD students have taken part in experimental activities within international research projects for thesis-related purposes.

Universitat Politecnica de Catalunya, Barcelona – Spain
Numerous joint research activities together with the UPC have been successfully carried out in the past years, especially in the geotechnical sector. Exchanges of PhD students and researchers have contributed to foster both PhD and research activities.

Université Grenoble Alpes – France
The collaboration between this university and the PhD programme in Structural, Seismic and Geotechnical Engineering began several years ago and has led to a rising number of visits, exchanges and collaborations on joint research projects, in particular with the Institut des Sciences de la Terre and the Laboratoire 3SR Sols, Solides et Structures, Risques.

Delft University of Technology – The Netherlands
The collaboration with the Delft University of Technology focuses on computational mechanics and the physical, numerical and theoretical modelling of the behaviour of porous materials.
A member of PhD Faculty Board has spent her sabbatical in Delft, where she has worked on the generation of fractures in porous materials, their hydro-mechanical characterization and flooding risks.

Interaction with and exposure to the non-academic sector is beneficial for doctoral candidates as well as for research and innovation-intensive employment sectors. Involvement in the challenges and opportunities of the non-academic sector of the economy and society is fostered by networking, connectivity, inter-sectorial mobility and wide access to knowledge.
In particular, the PhD programme in Structural, Seismic and Geotechnical Engineering collaborates with the following research agencies and industrial partners: STMicroelectronics; Tetra Pak Packaging Solutions; Italcementi; Lombardi Italia; Arup.

*__STMicroelectronics__ is a joint Italian-French multinational company with more than 50.000 employees. Since 2000 STMicroelectronics Italia has been researching and implementing the industrial production of Micro Electro Mechanical Systems (MEMS), thanks to its strong focus on R&D.
The collaboration with STMicroelectronics Italia mainly focuses on the following themes: MEMS mechanical reliability; mechanical characterization on the micro-scale; study and modelling of accidental impact; study of dissipative phenomena; study of stiction-related problems; study and planning of resonant machines and magnetometers; study of energy harvester systems; study of innovative micro-systems for the measurement of angular velocity (micro-gyroscopes); piezoelectric MEMS.
*__Tetra Pak Packaging Solutions__ is part of the Tetra Laval Group, founded in 1951 in Sweden, which provides innovative processing and packaging solutions for food products.
*__Italcementi__, founded in 1864 and now owned by the German Heidelberg Cement, is the number 1 in aggregates production, the number 2 in cement and number 3 in ready-mixed concrete worldwide.
*__Lombardi Italia__, founded in 1955 as consulting company for engineering services, cares for the life cycle of transport infrastructures ad hydraulic works from the initial design phases to their operation.
*__Arup__ is an independent firm of designers, planners, engineers, technical specialists and consultants, which has been offering multidisciplinary professional services since 1946 and is now worldwide.
*__Innovhub__, is a company conducting research activities, technical and scientific consulting and industrial testing in the field of paperboard, combustibles, oil and grease and silk. Joint research activities are in progress, with special reference to paperboard. A PhD scholarship has been partially sponsored by Innovhub to carry out research on the nonlinear behavior of paperboard during creasing and folding.

Attachment A1 – PhD Programme Coordinator

Prof. STEFANO MARIANI

EDUCATION AND ACADEMIC DEGREES
1995: "Laurea" (Master degree) with honours “cum laude” in Civil (Structural) Engineering at the Politecnico di Milano.
1999: Doctorate in Structural Engineering at the Politecnico di Milano.

EMPLOYMENT HISTORY
1999: Research Assistant at the Politecnico di Milano
2002: Assistant Professor in Structural Mechanics at the Politecnico di Milano.
2011: Associate Professor in Structural Mechanics at the Politecnico di Milano.

HONOURS
1996: Associazione *Carlo Maddalena* – Milano for young graduate students
2000: *Fondazione Confalonieri* – Milano for young Ph.D. students.

MEMBERSHIP IN EDITORIAL BOARDS OF INTERNATIONAL JOURNALS
Member of the Editorial Boards of a number of international journals, among which: Algorithms; International Journal on Advances in Systems and Measurements; Inventions; Machines; Materials; Micro and Nanosystems; Micromachines; Sensors.

CHAIRMANSHIP OF INTERNATIONAL CONFERENCES
Since 2014, co-chairman of the International Electronic Conference on Sensors and Applications (ECSA).

AREAS OF SCIENTIFIC ACTIVITY
The research activity has been mainly carried out in the fields of: ductile fracture; damage and fracture in quasi-brittle materials; parameter identification via Kalman filtering; reliability analysis of MEMS (Micro-Electro-Mechanical-Systems); data-driven structural health monitoring.

PUBLICATIONS
Around 290 papers in international peer reviewed journals and conferences.

Attachment A2 – PhD Faculty Board

Description of the composition of the Faculty Board

Name	**Affiliation**	**SSD / Title of SSD**
Mariani Stefano (Coordinator)	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 - Structural Mechanics
Ardito Raffaele	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics

Bamonte Patrick	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Biondini Fabio	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Bolzon Gabriella	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Bruggi Matteo	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Comi Claudia	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Corigliano Alberto	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Coronelli Dario (Vice-Coordinator)	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Cremonesi Massimiliano	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Della Vecchia Gabriele (Vice-Coordinator)	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/07 – Geotechnics
Di Prisco Claudio	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/07 – Geotechnics
Di Prisco Marco	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Felicetti Roberto	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Ferrara Liberato	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Frangi Attilio Alberto	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Ghisi Aldo	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Jommi Cristina	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/07 – Geotechnics
Lualdi Maurizio	Politecnico di Milano - Department of Civil and Environmental Engineering	GEO/11 –Applied Geophysics
Martinelli Luca	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Muciaccia Giovanni	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Paolucci Roberto	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 – Structural Engineering
Perego Umberto	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics
Petrini Lorenza Maria	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/08 – Structural Mechanics

Smerzini Chiara	Politecnico di Milano - Department of Civil and Environmental Engineering	ICAR/09 - Structural Engineering
Tamagnini Claudio	Perugia University - Department of Civil and Environmental Engineering	ICAR/07 – Geotechnics

Attachment A3 – PhD Advisory Board

Description of the composition of the Advisory Board

Name	Affiliation
Albert Luigi	Soil Geotecnica, Milano
Beltrami Carlo	Lombardi Ingegneria, Milano
Borsari Roberto	Tetra Pak. Packaging Solutions S.p.A.
Cena Francesca	Cena Interpipes Srl
Frigerio Antonella	RSE
Mazzà Guido	ITCOLD
Negro Paolo	JRC, Ispra
Scuri Silvia	Artech srl, Milano
Teora Maurizio	Arup Italia
Zambon Massimo	Techint, Milano
Zirpoli Ada	Harpaceas, Milano