Attachment A to Announcement PhD XXXIX round

PhD in ENGINEERING AND APPLIED SCIENCES
Coordinator: Prof.ssa Alessandra Marini

Scientific Area: 01 - Mathematics and informatics
  03 – Chemistry
  08 – Civil engineering and architecture
  09 – Industrial and information engineering
  13 - Economics and statistics

Curricula:
- Technologies for Energy and Environment
- Technologies for the conservation, protection, restoration and environmental sustainability
- Technologies for computer science, automation and electronics
- Applied mathematics and statistics

<table>
<thead>
<tr>
<th>Duration</th>
<th>Positions</th>
<th>Positions covered by scholarships</th>
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</thead>
<tbody>
<tr>
<td>3 years</td>
<td>13</td>
<td>13</td>
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Scholarships:

- No. 13 financed by Ministerial Decree 117/2023:

  1. Project title: Sustainable hydrogen compression
     Affiliated Company: SIAD Macchine Impianti Spa
     Reference Professor: Giovanna Barigozzi

  2. Project title: Innovative techniques and technologies for small and medium-sized construction companies in view of the new challenges related to sustainability.
     Affiliated Company: ANCE BERGAMO
     Reference Professor: Giuseppe Ruscica

  3. Project title: Integrate real-time data collected through various enriched and enhanced wearable devices to achieve information concerning physical, sensing and cognitive humans' capabilities
     Affiliated Company: CONSORZIO INTELLIMECH
     Reference Professor: Giuseppe Rosace

  4. Project title: Develop Data Analysis pipelines that, starting from wearable sensors and other variables, are able to assess physical and cognitive effort of the workers
     Affiliated Company: CONSORZIO INTELLIMECH
     Reference Professor: Fabio Previdi

  5. Project title: Sustainability criteria and performance of the window and door supply chain
     Affiliated Company: LEGNOLEGNO SC
     Reference Professor: Elisabetta Palumbo

  6. Project title: Innovative cranes with minimal carbon footprint
     Affiliated Company: O.ME.FA S.P.A
<table>
<thead>
<tr>
<th>Reference Professor: Paolo Righettini</th>
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<tbody>
<tr>
<td><strong>Project title:</strong> Development of smart sensors with a view to Industry 5.0 and Human Manufacturing</td>
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<tr>
<td><strong>Affiliated Company:</strong> TSM Sensors s.r.l.</td>
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<td><strong>Reference Professor:</strong> Fabio Previdi</td>
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<tr>
<td><strong>Project title:</strong> Study of innovative configurations of electric markets to support integration of distributed resources and flexible demand into the electric system</td>
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<tr>
<td><strong>Affiliated Company:</strong> RSE S.p.A.</td>
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<td><strong>Reference Professor:</strong> Maria Teresa Vespucci</td>
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<tr>
<th>Reference Professor: Andrea Belleri</th>
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<tr>
<td><strong>Project title:</strong> Life Cycle Thinking design for a new strategy of incremental, sustainable and integrated deep renovation of buildings to be adopted in the construction sector</td>
</tr>
<tr>
<td><strong>Affiliated Company:</strong> Benis Costruzioni s.r.l. - FRATUS RESTAURI SRL - ARPOSTUDIO S.R.L.</td>
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<tr>
<th>Reference Professor: Alessandra Marini</th>
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<tbody>
<tr>
<td><strong>Project title:</strong> Development of artificial intelligence systems for performing testing of medium voltage power distribution switchboards</td>
</tr>
<tr>
<td><strong>Affiliated Company:</strong> ABB S.p.A.</td>
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<tr>
<td><strong>Reference Professor:</strong> Fabio Previdi</td>
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<th>Reference Professor: Fulvio Adobati</th>
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<td><strong>Project title:</strong> Life Cycle Thinking approach for the design of multifunctional construction elements with high technological content in resilient buildings and assemblable through innovative construction sites.</td>
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<td><strong>Affiliated Company:</strong> IMPRESA PERCASSI SPA</td>
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<td><strong>Reference Professor:</strong> Alessandra Marini</td>
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<th>Reference Professor: Giuseppe Franchini</th>
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<td><strong>Project title:</strong> Experimentation with systematic and innovative approaches to environmental impact assessment of infrastructure projects</td>
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<tr>
<td><strong>Affiliated Company:</strong> AMBIENTE ITALIA SRL</td>
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<tr>
<td><strong>Reference Professor:</strong> Fulvio Adobati</td>
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<td><strong>Project title:</strong> Identification, analysis and optimization of energy storage systems in highway applications for powering technological and electric charging facilities</td>
</tr>
<tr>
<td><strong>Affiliated Company:</strong> Milano Serravalle – Milano Tangenziali Spa</td>
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**Modality of selection**
Assessment of qualifications and interview

**Access requirement:**
Possession, by Oct. 31, 2023, of one of the following master’s degrees or corresponding degree obtained under the previous regulations:

- LM-3 Architettura del paesaggio
- LM-4 Architettura e ingegneria edile-architettura
- LM-4 c.u. Architettura e ingegneria edile-architettura (quinquennale)
- LM-6 Biologia
- LM-17 Fisica
- LM-18 Informatica
- LM-20 Ingegneria aerospaziale e astronautica
LM-21 Ingegneria biomedica
LM-22 Ingegneria chimica
LM-23 Ingegneria civile
LM-24 Ingegneria dei sistemi edilizi
LM-25 Ingegneria dell'automazione
LM-26 Ingegneria della sicurezza
LM-27 Ingegneria delle telecomunicazioni
LM-28 Ingegneria elettrica
LM-29 Ingegneria elettronica
LM-30 Ingegneria energetica e nucleare
LM-31 Ingegneria gestionale
LM-32 Ingegneria informatica
LM-33 Ingegneria meccanica
LM-34 Ingegneria navale
LM-35 Ingegneria per l'ambiente e il territorio
LM-40 Matematica
LM-44 Modellistica matematico-fisica per l'ingegneria
LM-48 Pianificazione territoriale urbanistica e ambientale
LM-53 Scienza e ingegneria dei materiali
LM-54 Scienze chimiche
LM-56 Scienze dell'economia
LM-66 Sicurezza informatica
LM-71 Scienze e tecnologie della chimica industriale
LM-75 Scienze e tecnologie per l'ambiente e il territorio
LM-82 Scienze statistiche
LM-91 Tecniche e metodi per la società dell'informazione

3/S (specialistiche in architettura del paesaggio)
4/S (specialistiche in architettura e ingegneria edile)
20/S (specialistiche in fisica)
23/S (specialistiche in informatica)
25/S (specialistiche in ingegneria aerospaziale eastronautica)
26/S (specialistiche in ingegneria biomedica)
27/S (specialistiche in ingegneria chimica)
28/S (specialistiche in ingegneria civile)
29/S (specialistiche in ingegneria dell'automazione)
30/S (specialistiche in ingegneria delle telecomunicazioni)
31/S (specialistiche in ingegneria elettrica)
32/S (specialistiche in ingegneria elettronica)
33/S (specialistiche in ingegneria energetica e nucleare)
34/S (specialistiche in ingegneria gestionale)
35/S (specialistiche in ingegneria informatica)
36/S (specialistiche in ingegneria meccanica)
37/S (specialistiche in ingegneria navale)
38/S (specialistiche in ingegneria per l'ambiente e il territorio)
45/S (specialistiche in matematica)
50/S (specialistiche in modellistica matematico-fisica per l'ingegneria)
54/S (specialistiche in pianificazione territoriale urbanistica e ambientale)
61/S (specialistiche in scienza e ingegneria dei materiali)
62/S (specialistiche in scienze chimiche)
64/S (specialistiche in scienze dell'economia)
81/S (specialistiche in scienze e tecnologie della chimica industriale)
82/S (specialistiche in scienze e tecnologie per l'ambiente e il territorio)
83/S (specialistiche in scienze economiche per l'ambiente e la cultura)
In the case of a degree obtained abroad, the evaluation of the requirement will be carried out by the selection committee.

**Type of estimable qualifications**

*Qualification assessments (up to 60 marks):*

- *curriculum studiorum:* up to 30 marks;
- research project (which will be assessed on the basis of the scientific value, originality and articulation of the proposal, consistency with the research themes of the PhD program): up to 20 marks;
- other qualifications, publications, reference letters from Italian or foreign academics: up to 10 points.

*Interview (up to 30 marks):*

- knowledge of the English language and, for foreign students, also of the Italian language: up to 5 points
- discussion of the research project (assessment of the candidate’s capacity to convincingly discuss project preconditions and goals): up to 25 marks;

**Interview date:**
18/09/2023 at 09:30 a.m. (Italian time) eventually continuing on 19/09/2023 at 9:00 a.m. (Italian time) depending on the number of candidates participating to the interview.

The interview will be carried out via videoconference, on the basis of the commission’s decision. The interview will be held in English.

THE CHANCELLOR
(Professor Sergio Cavalieri)
Documento firmato digitalmente ai sensi dell’art. 24 del D. Lgs. 82/2005