ANNEX A - PhDs PROGRAMMES DATA SHEETS

PhD PROGRAMME IN
CIVIL AND ENVIRONMENTAL ENGINEERING, INTERNATIONAL COOPERATION AND
MATHEMATICS

Scientific areas
01 - Mathematical and Computing Sciences; 02 – Physical Sciences; 04 - Geological Sciences (Scienze della Terra); 06 - Medical Sciences; 07 - Agricultural and Veterinary Sciences; 08a - Civil Engineering; 08b – Architecture; 11a - Historical, Philosophical and Pedagogical Sciences; 13a - Economical and Statistical Sciences.

Macro areas
01/A; 02/A; 04/A; 06/D; 07/D; 07/E; 08/A; 08/B; 08/D; 08/E; 08/F; 11/A; 11/B; 13/D.

Duration
3 years

Starting date
April 01st, 2023

Proposing Structure
Department of Civil, Environmental, Architectural Engineering and Mathematics

Coordinator
Prof. Paolo Secchi

Curricula
The research activity concerns specific topics pertaining to the different curricula:
- Appropriate Methodologies and Techniques for International Development Co-operation (Health track and Technology track)
- Mathematical Methods and Models for Engineering
- Natural Risks Assessment and Management
- Structural Rehabilitation of Historical and Modern Buildings
- Technologies and Processes for the Environment and Agriculture
- Urban Planning and Mobility

Admission requirements
All University Degrees of the type enlisted below are eligible:

A University degree achieved in Italy, such as University Degree (Italian Laurea) achieved pursuant to the Italian academic system prior to Ministerial Decree 509/1999, amended with Ministerial Decree 270/2004; equivalent Advanced Degree (Italian Laurea Specialistica) / Master’s Degree (Italian Laurea Magistrale) or any equivalent academic Master Degree achieved from foreign Universities.

For PhD admission purposes only, the equivalence between degrees awarded abroad and the Italian degrees will be assessed by the Board of Examiners. The eligibility of the foreign university degree is ascertained by the Board of Examiners of the selection procedure of the PhD Programmes, in compliance with the legislation in force in Italy and in the country where the university degree was awarded, as well as by the Treaties or international agreements on recognition of university degrees for the continuance of studies.

Bachelor’s Degrees are not admitted.

Undergraduates can apply for admission, but they must have passed the degree examination by the start date of the PhD Programme activities: these candidates are required to provide the marks of the exams taken during their undergraduate career.
<table>
<thead>
<tr>
<th>Total number of posts available</th>
<th>n. 2 posts</th>
</tr>
</thead>
</table>

| Posts linked to a research topic | - 1 ordinary post for EU and no EU citizens benefitting a scholarship financed by the Italian PNRR funds under the project “Centro Nazionale Mobilità Sostenibile/CN4” - Spoke 7" National Centre for Sustainable Mobility CCAM, Connected Networks and Smart Infrastructure” (Code of project proposal CN00000023, Decree n. 1033 dated June 17, 2022, Budget code CUP D83C22000690001) having the research topic “La Sicurezza delle infrastrutture (Safety of infrastructures)”.  
- n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship financed by the company SHV Energy, located in The Netherlands, having the research topic “Highly selective synthesis of LPG from CO2 hydrogenation over bifunctional catalysts comprising modified methanol synthesis catalyst and hydrophobic zeolite.” |

| Evaluation of Curriculum Vitae and academic / professional history / Publications, etc. | University Degree: up to 10 points.  
For candidates under graduation condition, at most 10 points will be assigned, according to the following criterion:  
average mark between 101/110 and 110/110 corresponds to points from 1 to 10.  
Additional qualifications: up to 10 points |

| Evaluation of a project proposal | - For n. 1 ordinary post for EU and no EU citizens benefitting a scholarship financed by the Italian PNRR under the project “Centro Nazionale Mobilità Sostenibile/CN4” - Spoke 7” National Centre for Sustainable Mobility CCAM, Connected Networks and Smart Infrastructure” (Code of project proposal CN00000023, Decree n. 1033 dated June 17, 2022, Budget code CUP D83C22000690001) candidates’ application must include a research project proposal whose research topic will concern the safety of road infrastructures, such as bridges and tunnels, considering various aspects including safety and traffic management during maintenance. However, the research will focus on the issues of structural safety and on any repair/strengthening interventions, where necessary, to guarantee a new service life to the infrastructure which will also have to take into account the new traffic requirements.  
- For n. 1 ordinary post for EU and non-EU candidates benefitting of a three-year scholarship financed by the company SHV Energy, candidates’ application must include a research project proposal under the following topics:  
  - catalytic systems for multifunctional direct hydrogenation of CO2 supported on zeolites for the selective production of methanol and hydrocarbons.  
  - Possible synthetic strategies to limit the deactivation of zeolite acid sites by the water produced during CO2 hydrogenation.  
*** Required to all research projects***  
The project should be clearly related to one of the above-mentioned curricula. The project should be no more than 25,000 characters long, and structured as follows:  
1. Author  
2. Title |
3. A brief literature review
4. Motivations behind the research
5. Hypotheses and research design
6. Methods and tools
7. References.

*****
Maximum score: 40 points.
Minimum score to be admitted to the interview: 24 points.

The research project proposal must be uploaded on-line upon submission of the application.

### Interview
The interview will focus on the main curriculum topics and on the research project proposal, envisaging a maximum of 40 points.
Minimum score to pass the interview: 24 points.

Candidates may be allowed to be interviewed remotely with the use of a video conference application, pursuant to the prescriptions envisaged by Article 7, paragraphs 6 e 7 of the Call.

### Place and date of interview
The date (and, if needed, the place) of the interview will be published at least 10 days in advance on the UNIBS web site [https://www.unibs.it/en/node/1078](https://www.unibs.it/en/node/1078).

### Academic contact information of the PhD Programme
<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Analisi e gestione dei rischi naturali&quot;</td>
<td><a href="mailto:giovanna.grossi@unibs.it">giovanna.grossi@unibs.it</a></td>
</tr>
<tr>
<td>&quot;Metodi e modelli matematici per l'Ingegneria&quot;</td>
<td><a href="mailto:hynek.kovarik@unibs.it">hynek.kovarik@unibs.it</a></td>
</tr>
<tr>
<td>&quot;Metodologie e tecniche appropriate nella cooperazione internazionale allo sviluppo&quot;</td>
<td><a href="mailto:sabrina.sordini@unibs.it">sabrina.sordini@unibs.it</a></td>
</tr>
<tr>
<td>&quot;Pianificazione urbanistica e mobilità&quot;</td>
<td><a href="mailto:michele.pezzagno@unibs.it">michele.pezzagno@unibs.it</a></td>
</tr>
<tr>
<td>&quot;Recupero di edifici storici e contemporanei&quot;</td>
<td><a href="mailto:fausto.minelli@unibs.it">fausto.minelli@unibs.it</a></td>
</tr>
<tr>
<td>&quot;Tecnologie e processi per l'ambiente e l'agricoltura&quot;</td>
<td><a href="mailto:stefano.barontrini@unibs.it">stefano.barontrini@unibs.it</a></td>
</tr>
</tbody>
</table>

### Teaching and research PhD activity
[https://permalink.unibs.it/phd/38/generale](https://permalink.unibs.it/phd/38/generale)
[https://permalink.unibs.it/phd/38/general-en](https://permalink.unibs.it/phd/38/general-en)
[https://permalink.unibs.it/phd/38/dicacim/it](https://permalink.unibs.it/phd/38/dicacim/it)
[https://permalink.unibs.it/phd/38/dicacim/en](https://permalink.unibs.it/phd/38/dicacim/en)
[https://permalink.unibs.it/phd/38/comprasy](https://permalink.unibs.it/phd/38/comprasy)
[https://permalink.unibs.it/phd/38/langskprij](https://permalink.unibs.it/phd/38/langskprij)
[https://permalink.unibs.it/phd/38/dicacim/corsieseminari](https://permalink.unibs.it/phd/38/dicacim/corsieseminari)

### PhD PROGRAMME IN INFORMATION ENGINEERING

<table>
<thead>
<tr>
<th>Scientific areas</th>
<th>09 – Industrial and Information Engineering; 01 – Mathematical and Information Sciences; 02 – Physical Sciences; 03 – Chemical Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Macro areas</strong></td>
<td>01/A Mathematics</td>
</tr>
<tr>
<td>01/B Computer Technology</td>
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<tr>
<td>02/B Physics of Matter</td>
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<tr>
<td>02/A Physics of Fundamental Interactions</td>
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<tr>
<td>03/B Inorganic, Technological</td>
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<tr>
<td>09/E Electrical Engineering, Electronics and Measures</td>
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<tr>
<td>09/F Telecommunications Engineering and Electromagnetic Fields</td>
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<tr>
<td>09/G Systems and Bio Engineering</td>
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<tr>
<td>09/H Computer Engineering</td>
<td></td>
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</tbody>
</table>

### Duration
3 years

### Starting date
April 01st, 2023

### Proposing Structure
University of Brescia, Department of Information Engineering

### Coordinator
Prof. Ivano Alessandri
**Curricula**

- Curriculum in Electronic Engineering, Sensors and Instrumentation
- Curriculum in Computer Science/Engineering and Control Systems
- Curriculum in Telecommunication Engineering
- Curriculum in Physical, Chemical and Mathematical Sciences for Engineering

NOTE: Candidates are requested to attach to their submitted admission form a written list, ordered by preference, of the curricula they are interested in. Otherwise, candidates admitted to the interview shall express their preference of curricula at the interview.

**Admission requirements**

<table>
<thead>
<tr>
<th>LM-17 Physics;</th>
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</thead>
<tbody>
<tr>
<td>LM-18 Computer Science;</td>
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<tr>
<td>LM-20 Aerospatiale and Astronautic Engineering;</td>
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<tr>
<td>LM-21 Biomedical Engineering;</td>
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<tr>
<td>LM-22 Chemical Engineering;</td>
</tr>
<tr>
<td>LM-23 Civil Engineering</td>
</tr>
<tr>
<td>LM-25 Automation Engineering;</td>
</tr>
<tr>
<td>LM-26 Safety Engineering;</td>
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<tr>
<td>LM-27 Telecommunications Engineering;</td>
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<tr>
<td>LM-28 Electrical Engineering;</td>
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<tr>
<td>LM-29 Electronic Engineering;</td>
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<tr>
<td>LM-30 Energy and Nuclear Engineering;</td>
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<tr>
<td>LM-31 Management Engineering;</td>
</tr>
<tr>
<td>LM-32 Computer Systems Engineering;</td>
</tr>
<tr>
<td>LM-33 Mechanical Engineering;</td>
</tr>
<tr>
<td>LM-34 Naval Engineering;</td>
</tr>
<tr>
<td>LM-35 Environmental Engineering;</td>
</tr>
<tr>
<td>LM-40 Mathematics;</td>
</tr>
<tr>
<td>LM-44 Mathematical Modelling for Engineering;</td>
</tr>
<tr>
<td>LM-48 Urban and environmental territorial planning</td>
</tr>
<tr>
<td>LM-53 Materials science and engineering;</td>
</tr>
<tr>
<td>LM-54 Chemical Sciences;</td>
</tr>
<tr>
<td>LM-55 Cognitive Sciences;</td>
</tr>
<tr>
<td>LM-56 Economics Sciences;</td>
</tr>
<tr>
<td>LM-58 Sciences of the Universe;</td>
</tr>
<tr>
<td>LM-66 Computer Security;</td>
</tr>
<tr>
<td>LM-70 Food Sciences and Technologies;</td>
</tr>
<tr>
<td>LM-71 Sciences and Technologies of Industrial Chemistry;</td>
</tr>
<tr>
<td>LM-72 Navigation Sciences and Technologies;</td>
</tr>
<tr>
<td>LM-75 Environmental and Land Sciences;</td>
</tr>
<tr>
<td>LM-79 Geophysical Sciences</td>
</tr>
<tr>
<td>LM-82 Statistics</td>
</tr>
<tr>
<td>LM-86 Zootechnical sciences and animal technologies</td>
</tr>
<tr>
<td>LM-91 Techniques and methods for the information society</td>
</tr>
<tr>
<td>LM-92 Theories of communication</td>
</tr>
<tr>
<td>LM-93 Theories and methodologies of e-learning and media education</td>
</tr>
<tr>
<td>LM / SC Criminological sciences applied to investigation and security</td>
</tr>
</tbody>
</table>

A University degree achieved in Italy, such as University Degree (Italian Laurea) achieved pursuant to the Italian academic system prior to Ministerial Decree 509/1999, amended with Ministerial Decree 270/2004; equivalent Advanced Degree (Italian Laurea Specialistica) / Master's Degree (Italian Laurea Magistrale) or any equivalent academic Master Degree achieved from foreign Universities.

For PhD admission purposes only, the equivalence between degrees awarded...
abroad and the Italian degrees will be assessed by the Board of Examiners. The eligibility of the foreign university degree is ascertained by the Board of Examiners of the selection procedure of the PhD Programmes, in compliance with the legislation in force in Italy and in the country where the university degree was awarded, as well as by the Treaties or international agreements on recognition of university degrees for the continuance of studies.

**Bachelor’s Degrees are not admitted.**

Undergraduates can apply for admission, but they must have passed the degree examination by the start date of the PhD Programme activities: these candidates are required to provide the marks of the exams taken during their undergraduate career.

Preferential requirement is the relevance of the undergraduate University Degree awarded in the topics of the PhD Programme of Information Engineering.

<table>
<thead>
<tr>
<th>Total number of posts available</th>
<th>n. 2</th>
</tr>
</thead>
</table>

| Posts linked to a research topic | - n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship financed by the University of Brescia and Lucchini RS S.p.A., having the research topic "Optimization of production processes and reduction of consumption in energy-intensive companies in the steel sector: development of innovative mathematical programming techniques for a sustainable industry" (post being consistent with the Italian PNRR Min. Decree n.o 352/2022 - position no. 54).

- n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship co-funded by the Company E.D. ELETTRONICA DEDICATA SRL, having a specific research topic about “Study and development of a test system for the application of EOS pulses on integrated electronic circuits” (post being consistent with the Italian PNRR Min. Decree no. 352/2022 – position no. 51 resolution SA 152) |

<table>
<thead>
<tr>
<th>Selection Procedure</th>
</tr>
</thead>
</table>

**Evaluation of Curriculum Vitae and academic / professional history / Publications, etc.**

Maximum score: 20/100

Eligible documentation:

- University curriculum, including the specification of the degree achieved or to be achieved, title and one-page summary of the Master thesis, and transcript of academic records
- Previous study experience in prominent international research centers
- Any other supporting documentation and qualifications that can be considered relevant and useful for the admission evaluation process.

**Evaluation of a project proposal**

The research project proposal must be submitted online jointly with the admission form.

The topic of the research project must fall within research activities that are relevant to any of the curricula of the PhD Programme.

*** Required to all research projects***

The research project must be presented as a written proposal, in either Italian or English, with a maximum length of 25,000 characters (excluding spaces), and should be organized as follows:

1. Author
2. Title
3. Summary of State-of-the-art
4. Main motivations and goals of the proposed research proposal
5. Detailed description of the research project
6. Proposed scientific methodology
7. Bibliographic references.

Only candidates who score at least 24 points in the evaluation of their research proposal will be admitted to the interview.

**Interview**

Maximum score for the interview: 40/100

Interview includes to discuss on the research project proposal the candidates’ present; on the possible list of publications and qualifications presented by the candidate, and an oral evaluation of English language skills.

Candidates may be allowed to be interviewed remotely with the use of a video conference application, pursuant to the prescriptions envisaged by Article 7, paragraphs 6 e 7 of the Call.

**Place and date of interview**
The date (and, if needed, the place) of the interview will be published at least, 10 days in advance on the UNIBS web site https://www.unibs.it/en/node/1078

**Academic contact information of the PhD Programme**
Prof. Ivano Alessandri, e-mail ivano.alessandri@unibs.it
Mrs. Rosaria Nardo – Secretariat Department of Information Engineering; rosaria.nardo@unibs.it

**Teaching and research PhD activity**
https://permalink.unibs.it/phd/38/generale
https://permalink.unibs.it/phd/38/general-en
https://permalink.unibs.it/phd/38/drii/site
https://drii.unibs.it/
https://permalink.unibs.it/phd/38/drii/it
https://permalink.unibs.it/phd/38/drii/en
https://permalink.unibs.it/phd/38/comptrasv
https://permalink.unibs.it/phd/38/langskprj

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**PhD PROGRAMME IN MECHANICAL AND INDUSTRIAL ENGINEERING**

**Scientific areas**
01 – Mathematical and Information Sciences; 02 – Physical Sciences; 03 – Chemical Sciences; 08 – Civil Engineering and Architecture; 09 – Industrial and Information Engineering; 12 – Law Sciences; 13 – Economical and Statistical Sciences; 14 – Social and Political Sciences

**Macro areas**
01/A - Mathematical analysis, probability and mathematical statistics
02/A – Physics of Fundamental Interactions
03/B - Inorganic Chemistry and Applied Technologies
08/B – Structural and Geotechnical Engineering
09/A – Mechanical and Aerospace Engineering and Naval Architecture
09/B – Manufacturing, Industrial an Management Engineering,
09/C – Energy, Thermomechanical and Nuclear Engineering
09/D – Chemical and Materials Engineering
09/E – Electrical and Electronic Engineering and Measurements
09/G – Systems Engineering and Bioengineering
12/E – International, European Union, Comparative, Economic and Market Law
13/A - Economy
14/D – Sociology of economic processes, work, environment and territory.

**Duration**
3 years

**Starting date**
April 01st, 2023
<table>
<thead>
<tr>
<th>Proposing Structure</th>
<th>Department of Mechanical and Industrial Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinator</td>
<td>Prof. Pietro Poesio</td>
</tr>
<tr>
<td>Curricula</td>
<td>Smart Factory and Advanced Manufacturing Industry</td>
</tr>
<tr>
<td></td>
<td>Sustainable Mobility</td>
</tr>
<tr>
<td></td>
<td>Health and Well-being</td>
</tr>
<tr>
<td></td>
<td>Production systems, safety, environment, and quality of work</td>
</tr>
<tr>
<td></td>
<td>Development of basic and methodological knowledge</td>
</tr>
<tr>
<td>Admission requirements</td>
<td>All University Degrees of the type enlisted below are eligible.</td>
</tr>
<tr>
<td></td>
<td>A University degree achieved in Italy, such as University Degree (Italian Laurea) achieved pursuant to the Italian academic system prior to Ministerial Decree 509/1999, amended with Ministerial Decree 270/2004; equivalent Advanced Degree (Italian Laurea Specialistica) / Master's Degree (Italian Laurea Magistrale) or any equivalent academic Master Degree achieved from foreign Universities. For PhD admission purposes only, the equivalence between degrees awarded abroad and the Italian degrees will be assessed by the Board of Examiners. The eligibility of the foreign university degree is ascertained by the Board of Examiners of the selection procedure of the PhD Programmes, in compliance with the legislation in force in Italy and in the country where the university degree was awarded, as well as by the Treaties or international agreements on recognition of university degrees for the continuance of studies.</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s Degrees are not admitted.</td>
</tr>
<tr>
<td></td>
<td>Undergraduates can apply for admission, but they must have passed the degree examination by the start date of the PhD Programme activities: these candidates are required to provide the marks of the exams taken during their undergraduate career.</td>
</tr>
<tr>
<td></td>
<td>Proficiency in English is required</td>
</tr>
<tr>
<td>Total number of posts available</td>
<td>n. 2</td>
</tr>
<tr>
<td>Posts linked to a research topic</td>
<td>- n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship financed by the University of Brescia and Acque Bresciane S.r.l., having the research topic “Study of the biocorrosion of hydraulic artifacts” (post being consistent with the Italian PNRR Min. Decreto n. o 352/2022 position no. 50).</td>
</tr>
<tr>
<td></td>
<td>- n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship financed by the Italian PNRR under the project “Centro Nazionale Mobilità Sostenibile/CN4”, Spoke 11 “Materiali Innovativi e Alleggerimento” (Codice proposta CN00000023, decreto 1033 del 17/06/2022, CUP D83C22000690001) / “National Centre of Sustainable Mobility/CN4”, Spoke 11 “Innovative Materials and Lightweighting” (Code of Project Proposal CN00000023, Decreto n. 1033 dated June 17th, 2022, Budget Code CUP D83C22000690001).</td>
</tr>
<tr>
<td>Selection Procedure</td>
<td>Evaluation of Curriculum Vitae and academic / professional history / Publications, etc. Maximum score: 20/100</td>
</tr>
<tr>
<td></td>
<td>Eligible documentation:</td>
</tr>
<tr>
<td></td>
<td>- University curriculum, including the specification of the degree achieved or to be achieved, title and one-page summary of the Master thesis, and transcript of academic records,</td>
</tr>
<tr>
<td></td>
<td>- Scientific publications</td>
</tr>
</tbody>
</table>
**Evaluation of a project proposal**

- Any other supporting documentation and qualifications that can be considered relevant and useful for the admission evaluation process

- For n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship financed by the Italian PNR under the project “Centro Nazionale Mobilità Sostenibile/CN4”, Spoke 11 “Materiali Innovativi e Alleggerimento” (Codice proposta CN00000023, decreto 1033 del 17/06/2022, CUP D83C22000690001) / “National Centre of Sustainable Mobility/CN4”, Spoke 11 “Innovative Materials and Lightweighting” (Code of Project Proposal CN00000023, Decree n. 1033 dated June 17th, 2022, Budget Code CUP D83C22000690001) candidates’ application must include a proposal that demonstrates the candidate’s ability to develop a research project, possibly and preferably relating to mobility in its different meanings and characteristics, with a declination of the topic in line with those of the PhD Programme.

Projects close to the title of the research "Innovative Materials & Lightweighting", characteristic of Spoke 11, and which therefore address aspects such as for example the study of innovative materials for structural lightweighting in the transport sector, the study of more efficient and sustainable production and transformation processes of materials (including additive manufacturing technologies), or the development of design methodologies based on structural optimization aimed at lightening, or the assessment of sustainability, recyclability and recovery of materials or their impact on the vehicle.

*** Required to all research projects***

Maximum score for the research project proposal: 40/100

The research project proposal must be submitted on-line jointly with the admission form. The topic of the research project must fall within research activities that are relevant to any of the curricula of the PhD Programme. The research project must be presented as a written proposal, in either Italian or English, with a maximum length of 25,000 characters (excluding spaces), and should be organized as follows:

1. Author
2. Title
3. Summary of State-of-the-art
4. Main motivations and goals of the proposed research proposal
5. Detailed description of the research project
6. Proposed scientific methodology
7. Bibliographic references.

Only candidates who score at least 24 points in the evaluation of their research proposal will be admitted to the interview.

**Interview**

Maximum score for the oral: 40/100

The interview will focus to discuss about the academic and professional qualifications outlined by the candidate, on a thematic area of the PhD Programme and will be designed to assess the motivation and ability of the candidate to scientific research. The interview is inclusive of the evaluation of the knowledge of the English language.

Only candidates who score at least 24 points in the interview will be considered eligible.
Candidates may be allowed to be interviewed remotely with the use of a video conference application, pursuant to the prescriptions envisaged by Article 7, paragraphs 6 e 7 of the Call.

**Place and date of interview**

The date (and, if needed, the place) of the interview will be published at least, 10 days in advance on the UNIBS web site [https://www.unibs.it/en/node/1078](https://www.unibs.it/en/node/1078)

**Academic contact information of the PhD Programme**

Prof. Pietro Poesio, e-mail: pietro.poesio@unibs.it

**Teaching and research PhD activity**

[https://permalink.unibs.it/phd/38/generale](https://permalink.unibs.it/phd/38/generale)
[https://permalink.unibs.it/phd/38/general-en](https://permalink.unibs.it/phd/38/general-en)
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[https://permalink.unibs.it/phd/38/comptrasv](https://permalink.unibs.it/phd/38/comptrasv)
[https://permalink.unibs.it/phd/38/langskprj](https://permalink.unibs.it/phd/38/langskprj)

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### PhD PROGRAMME IN TECHNOLOGY FOR HEALTH

**Scientific areas**

03 - Chemical Sciences; 05 - Biological Sciences; 06 - Medical Sciences; 09 - Industrial and Information Engineering.

**Macro areas**

03/B2; 03/D2 05/D1; 05/G1; 06/A2; 06/E3; 06/F1; 06/I1; 06/M2; 09/D1; 09/E4; 09/F1; 09/F2; 09/G1; 09/G2; 09/H1

**Duration**

3 years

**Starting date**

April 01st, 2023

**Proposing Structure**

Dipartimento di Ingegneria dell’Informazione (DII)

**Coordinator**

Prof. Nicola Francesco Lopomo

**Curricula**

Not envisaged

**Admission requirements**

- LM-6 Biology
- LM-7 Agricultural Biotechnologies
- LM-8 Industrial Biotechnologies
- LM-9 Medical, veterinary and pharmaceutical biotechnologies
- LM-13 Pharmacy and industrial pharmacy
- LM-17 Physics
- LM-18 Informatics
- LM-21 Biomedical Engineering
- LM-22 Chemical Engineering
- LM-23 Civil Engineering
- LM-25 Automation Engineering
- LM-26 Safety Engineering
- LM-27 Telecommunications Engineering
- LM-28 Electrical Engineering
- LM-29 Electronic Engineering
- LM-30 Energy and nuclear Engineering
- LM-31 Management Engineering
- LM-32 Computer Engineering
- LM-33 Mechanical Engineering
- LM-35 Environmental and land Engineering
- LM-40 Mathematics
- LM-41 Medicine and surgery
- LM-44 Mathematical-physical modelling for Engineering
- LM-46 Dentistry and dental prostheses
- LM-47 Organization and management of sports and physical activity services
- LM-53 Materials science and Engineering
<table>
<thead>
<tr>
<th>LM-54 Chemical sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM-60 Natural sciences</td>
</tr>
<tr>
<td>LM-61 Sciences of human nutrition</td>
</tr>
<tr>
<td>LM-66 Computer security</td>
</tr>
<tr>
<td>LM-67 Sciences and techniques of preventive and adapted motor activities</td>
</tr>
<tr>
<td>LM-68 Sport sciences and techniques</td>
</tr>
<tr>
<td>LM-69 Agricultural sciences and technologies</td>
</tr>
<tr>
<td>LM-70 Food science and technology</td>
</tr>
<tr>
<td>LM-71 Sciences and technologies of industrial chemistry</td>
</tr>
<tr>
<td>LM-74 Geological Sciences and Technologies</td>
</tr>
<tr>
<td>LM-75 Science and technology for the environment and the territory</td>
</tr>
<tr>
<td>LM-79 Geophysical sciences</td>
</tr>
<tr>
<td>LM-82 Statistical sciences</td>
</tr>
<tr>
<td>LM/SNT1 Nursing and midwifery sciences</td>
</tr>
<tr>
<td>LM/SNT2 Rehabilitative sciences of the health professions</td>
</tr>
<tr>
<td>LM/SNT3 Sciences of technical health professions</td>
</tr>
<tr>
<td>LM/SNT4 Sciences of prevention health professions</td>
</tr>
</tbody>
</table>

A University degree achieved in Italy, such as University Degree (Italian Laurea) achieved pursuant to the Italian academic system prior to Ministerial Decree 509/1999, amended with Ministerial Decree 270/2004; equivalent Advanced Degree (Italian Laurea Specialistica) / Master's Degree (Italian Laurea Magistrale) or any equivalent academic Master Degree achieved from foreign Universities.

For PhD admission purposes only, the equivalence between degrees awarded abroad and the Italian degrees will be assessed by the Board of Examiners. The eligibility of the foreign university degree is ascertained by the Board of Examiners of the selection procedure of the PhD Programmes, in compliance with the legislation in force in Italy and in the country where the university degree was awarded, as well as by the Treaties or international agreements on recognition of university degrees for the continuance of studies.

**Bachelor's Degrees are not admitted.**

Undergraduates can apply for admission, but they must have passed the degree examination by the start date of the PhD Programme activities: these candidates are required to provide the marks of the exams taken during their undergraduate career.

<table>
<thead>
<tr>
<th>Total number of posts available</th>
<th>n. 6, out of which:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- n. 4 posts benefiting of a scholarship / other forms of financial support and</td>
</tr>
<tr>
<td></td>
<td>- n. 2 posts without scholarship / other forms of financial support.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Out of which, posts benefiting a scholarship, not having a research topic</th>
<th>n. 1 ordinary post for EU and no EU citizens not benefiting a scholarship and not having a research topic</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Posts linked to a research topic</th>
<th>- n. 1 ordinary post for EU and no EU citizens benefiting a scholarship financed by the Italian PNRR funds, under the Project “Centro Nazionale Mobilità sostenibile/CN 4” – Spoke 5 (Codice proposta CN00000023, decreto 1033 del 17/06/2022, CUP D83C22000690001) a tema di ricerca “ICT and electrical technologies to support light mobility” / “National Centre of Sustainable Mobility/CN4” – Spoke 5 (Code of Project Proposal n. CN00000023, Decree n. 1033, dated June 17th, 2022, Budget Code CUP D83C22000690001) having a research topic on “ICT and electrical technologies to support light mobility”</th>
</tr>
</thead>
</table>
- n. 1 ordinary post for EU and no EU citizens benefitting a scholarship financed by the EU Project “ERC-CoG – INcEPTION – 101045605” having the research topic on “Development of innovative experimental protocols and computational tools for assessing neural connectivity in arm and shoulder muscles”;

- n. 1 ordinary post for EU and non-EU candidates benefitting of a three-year contract of Apprenticeship in Advanced Training financed by the company Area 9000 S.r.l., having the research topic “Evolution of Smart cities and IoT-based systems to support the environment and people with reduced mobility”

**Selection Procedure**

**Evaluation of Curriculum Vitae and academic / professional history / Publications, etc.**

Preliminarily, the Board of Examiners will evaluate the candidates' Curriculum Vitae. The Candidate will be admitted to the qualifications evaluation, as a result of the positive relevance assessment between the Curriculum Vitae and the research areas of the PhD Programme.

Evaluation score: 0-20 points as follows:

a) Score of the Degree: 0-10 points or, in alternative, if the candidate is not yet graduated, instead of the final grade the average grade of the passed exams will be taken into consideration.

b) Publications: 0-4 points.

c) Other qualifications: 0-6 points.

**Evaluation of a project proposal**

- For n. 1 ordinary post for EU and no EU citizens benefitting a scholarship financed by the Italian PNRR funds, under the Project “National Centre of Sustainable Mobility/CN4” – Spoke 5 (Code of Project Proposal n. CN00000023, Decree n. 1033, dated June 17th, 2022, Budget Code CUP D83C22000690001) having a research topic on “ICT and electrical technologies to support light mobility” candidates’ application must include a proposal that demonstrates the candidate’s ability to develop a research project, possibly and preferably relating to the overall topic in its different meanings and characteristics, with a declination of the topic in line with those of the PhD Programme.

By way of non-exclusive example, for the PhD Programme in "Technology for Health" projects close to the research title “ICT and electrical technologies to support light mobility”, typical of the Spoke 5 of the National Centre of Sustainable Mobility, and which therefore deal with the issue of light mobility service infrastructures from the point of view of the electric recharging infrastructure or the network infrastructure or electronic devices for safety

- For n. 1 ordinary post for EU and no EU citizens benefitting a scholarship financed by “ERC-CoG – INcEPTION – 101045605” - related to the development of an innovative neuromodulation system funded by the European Research Council, having a research topic on “Development of innovative experimental protocols and computational tools for assessing neural connectivity in arm and shoulder muscles”, candidates’ application must include a project proposal aimed at evaluating and quantifying muscle synergies and motor neuron connectivity in the upper limb through high-density surface electromyography.

*** Required to all research projects***

The PhD Board of Examiners evaluates the research project candidates will present pursuant to the criteria under the section “Additional Documentation Required”.

The maximum score: 0 - 40 points

Only candidates who score at least 24 points in the evaluation of their
## Additional Documentation Required

For the evaluation of candidates experience and of the project proposal, in addition to what is required by the Call, candidates are required to present:

1) A detailed Curriculum Vitae, including:
   - A title and summary of one page of the thesis (for undergraduates admitted conditionally, in the absence of the thesis, a draft of it signed by the supervisor).
   - The University Master degree score, or, if being under condition to yet graduate, a list of the examinations with the relevant score.
   - The University Master degree or, in lack of it a list of the examinations with the relevant score.
   - Any training experience (internships, thesis, double degrees) carried out abroad with a brief description of the performed activity.

2) A research project, which must be presented as a written proposal, having a maximum length of 25,000 characters (including spaces), and should be formatted as follows:
   - Author
   - Title
   - Summary of State of the art
   - Detailed description of the research project
   - Bibliographic references.

3) List of the scientific publications.
4) A brief statement in which the candidate describes the scientific interest and the motivations for the application to the doctoral program.
5) Reference letters, if available.

The documents required must be written in English language.

## Interview

The Interview includes a discussion on the presented research project proposal, on the possible candidate’s list of publications and qualifications, and an oral evaluation of English language skills.

The maximum score for the evaluation of the Interview is 40 points.

The Interview is considered passed unless the candidate has achieved a score of at least 20.

Candidates may be allowed to be interviewed remotely with the use of a video conference application, pursuant to the prescriptions envisaged by Article 7, paragraphs 6 e 7 of the Call.

## Place and date of the interview

The date (and, if needed, the place) of the interview will be published at least, 10 days in advance on the UNIBS web site https://www.unibs.it/en/node/1078

## Academic contact information of the PhD Programme

Mrs. Rosaria Nardo, Department of Information Engineering, e-mail: rosaria.nardo@unibs.it

## Teaching and research PhD activity

- https://permalink.unibs.it/phd/38/generale
- https://permalink.unibs.it/phd/38/general-en
- https://permalink.unibs.it/phd/38/t4h/it
- https://permalink.unibs.it/phd/38/t4h/en
- https://tech4health.unibs.it
- https://permalink.unibs.it/phd/38/comptrasv
- https://permalink.unibs.it/phd/38/langskprj
## PhD Programme in Energy Transition and Sustainable Production Systems

### Scientific Areas
- 01 – Mathematical and Information Sciences
- 02 – Physical Sciences
- 03 – Chemical Sciences
- 08 – Civil Engineering and Architecture
- 09 – Industrial and Information Engineering
- 12 – Law Sciences
- 13 – Economical and Statistical Sciences
- 14 – Social and Political Sciences

### Macro Areas
- 01/A - Mathematical analysis, probability and mathematical statistics
- 02/A – Physics of Fundamental Interactions
- 03/B - Inorganic Chemistry and Applied Technologies
- 08/B – Structural and Geotechnical Engineering
- 09/A – Mechanical and Aerospace Engineering and Naval Architecture
- 09/B – Manufacturing, Industrial and Management Engineering
- 09/C – Energy, Thermomechanical and Nuclear Engineering
- 09/D – Chemical and Materials Engineering
- 09/E – Electrical and Electronic Engineering and Measurements
- 09/G – Systems Engineering and Bioengineering
- 12/E – International, European Union, Comparative, Economic and Market Law
- 13/A – Economy
- 14/D – Sociology of economic processes, work, environment and territory

### Duration
- 3 years

### Starting date
- April 01st, 2023

### Proposing Structure
- Department of Mechanical and Industrial Engineering

### Coordinator
- Prof.ssa Marialuisa Volta

### Curricula
- Curriculum in Energy Transition
- Curriculum in Sustainable production systems

### Admission Requirements

A University degree achieved in Italy, such as University Degree (Italian Laurea) achieved pursuant to the Italian academic system prior to Ministerial Decree 509/1999, amended with Ministerial Decree 270/2004; equivalent Advanced Degree (Italian Laurea Specialistica) / Master's Degree (Italian Laurea Magistrale) or any equivalent academic Master Degree achieved from foreign Universities.

For PhD admission purposes only, the equivalence between degrees awarded abroad and the Italian degrees will be assessed by the Board of Examiners. The eligibility of the foreign university degree is ascertained by the Board of Examiners of the selection procedure of the PhD Programmes, in compliance with the legislation in force in Italy and in the country where the university degree was awarded, as well as by the Treaties or international agreements on recognition of university degrees for the continuance of studies.

**Bachelor's Degrees are not admitted.**

Undergraduates can apply for admission, but they must have passed the degree examination by the start date of the PhD Programme activities: these candidates are required to provide the marks of the exams taken during their undergraduate career.

### Total number of posts available
- n. 2

### Posts linked to a research topic
- n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship financed by the company A.B.P. Nocivelli SpA, having the research topic “Sustainability in health systemic analysis, organizational solutions and methodologies for the efficient use of facilities and resources”.
- n. 1 ordinary post for EU and non-EU candidates benefiting of a three-year scholarship financed by the company A2A S.p.A., having the research topic...
<table>
<thead>
<tr>
<th>Selection Procedure</th>
</tr>
</thead>
</table>
| **Evaluation of Curriculum**  
Vitae and academic / professional history / Publications, etc. | Maximum score: 20/100.  
Eligible documentation:  
- University curriculum, including the specification of the degree achieved or to be achieved, title and one-page summary of the Master thesis, and transcript of academic records,  
- Scientific publications  
- Any other supporting documentation and qualifications that can be considered relevant and useful for the admission evaluation process. |
| **Evaluation of a project proposal** | Maximum score for the research project proposal: 40/100.  
*** Required to all research projects***  
The research project proposal must be submitted on-line jointly with the admission form. The topic of the research project must fall within research activities that are relevant to any of the curricula of the PhD Programme.  
The research project must be presented as a written proposal, in either Italian or English, with a maximum length of 25,000 characters (excluding spaces), and should be organized as follows:  
1. Author  
2. Title  
3. Summary of State-of-the-art  
4. Main motivations and goals of the proposed research proposal  
5. Detailed description of the research project  
6. Proposed scientific methodology  
7. Bibliographic references.  
Only candidates who score at least 24 points in the evaluation of their research proposal will be admitted to the interview. |
| **Interview** | Maximum score at the interview: 40/100  
The interview will focus to discuss about the research project, about the publications and the academic and professional qualifications outlined by the candidate. The interview is inclusive of the evaluation of the knowledge of the English language.  
Only candidates who score at least 24 points in the interview will be considered eligible.  
Candidates may be allowed to be interviewed remotely with the use of a video conference application, pursuant to the prescriptions envisaged by Article 7, paragraphs 6 e 7 of the Call. |
| **Place and date of interview** | The date (and, if needed, the place) of the interview will be published at least 10 days in advance on the UNIBS web site  
https://www.unibs.it/en/node/1078 |
| **Academic contact information of the PhD Programme** | Prof.ssa Marialuisa Volta, e-mail: marialuisa.volta@unibs.it |
| **Teaching and research PhD activity** | https://permalink.unibs.it/phd/38/generale  
https://permalink.unibs.it/phd/38/general-en  
https://permalink.unibs.it/phd/38/transizione-energetica/it  
https://permalink.unibs.it/phd/38/transizione-energetica/en |
**PhD PROGRAMME IN PRECISION MEDICINE**

<table>
<thead>
<tr>
<th>Scientific areas</th>
<th>02-Physical Sciences, 05-Chemical Sciences, 05- Biological Sciences; 06-Medical Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macro areas</td>
<td>02/B, 03/B, 03/D, 05/E, 05/F, 05/G, 06/A, 06/C, 06/D, 06/M</td>
</tr>
<tr>
<td>Duration</td>
<td>3 years</td>
</tr>
<tr>
<td>Starting date</td>
<td>April 01st, 2023</td>
</tr>
<tr>
<td>Proposing Structure</td>
<td>Department of Molecular and Translational Medicine</td>
</tr>
<tr>
<td>Coordinator</td>
<td>Prof. Marco Presta</td>
</tr>
<tr>
<td>Curricula</td>
<td>Not envisaged</td>
</tr>
<tr>
<td>Admission requirements</td>
<td>The following University Degrees achieved in Italy:</td>
</tr>
<tr>
<td></td>
<td>LM-6 Biology</td>
</tr>
<tr>
<td></td>
<td>LM-7 Agricultural Biotechnologies</td>
</tr>
<tr>
<td></td>
<td>LM-8 Industrial Biotechnologies</td>
</tr>
<tr>
<td></td>
<td>LM-9 Medical, Veterinary and Pharmaceutical Biotechnologies</td>
</tr>
<tr>
<td></td>
<td>LM-13 Pharmacy and Industrial Pharmacy</td>
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<tr>
<td></td>
<td>LM-17 Physics</td>
</tr>
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<td></td>
<td>LM-18 Informatics</td>
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<tr>
<td></td>
<td>LM-41 Medicine and Surgery</td>
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<tr>
<td></td>
<td>LM-54 Chemistry</td>
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<td></td>
<td>LM-55 Cognitive Sciences</td>
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<td></td>
<td>LM-60 Nature Sciences</td>
</tr>
<tr>
<td></td>
<td>LM-61 Science of Human Nutrition</td>
</tr>
<tr>
<td></td>
<td>LM-67 Science and Technology of Preventive and Adaptive Physical Activities</td>
</tr>
<tr>
<td></td>
<td>LM/SNT2 Rehabilitation Sciences</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Total number of posts available</th>
<th>n. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posts linked to a research topic</td>
<td>- n. 1 ordinary post for EU and no EU citizens benefitting a scholarship financed by the Italian PNRR funds, under the Project “Centro Nazionale sullo sviluppo di terapia genica e farmaci con tecnologia a RNA/CN3” (Codice proposta CN00000041, decreto 1035 del 17/06/2022, CUP D83C2200068001) a tema di ricerca: “Identification of hot spot genes mutations in tumor and prediction of their impact in drug response” / “National Centre on the Development of Gene Therapy and Drugs having the Technology RNA/CN3” (Code of Project Proposal CN00000041, Decree n. 1035, dated June 17th, 2022, Budget Code CUP D83C2200068001) having a research topic on “Identification of hot spot genes mutations in tumor and prediction of their impact in drug response”.</td>
</tr>
</tbody>
</table>

### Selection Procedure

**Evaluation of Curriculum Vitae and academic / professional history / Publications, etc.**
- Maximum score: 40/100
  - Undergraduate University degree final score: maximum score 20/100
  - Average grade of examinations passed during the course (only for undergraduates who will pass the degree examination by the start date of the PhD Programme activities): maximum score 20/100
  - Publications: maximum score 8/100
  - Presentations to scientific meetings: maximum score 6/100
  - Other qualifications: specialization, educational courses and stages, conference attendance. English language certificates: maximum score 6/100.

1 letter of recommendation must be provided jointly with the other documents required for application.

**Interview**
- Maximum score: 60/100
  - Interview on one of the thematic areas of the curriculum indicated by the candidate; it envisages to discuss about the candidates’ qualifications provided; evaluation of the knowledge of English language; evaluation of communication skill and motivation to research.

  The interview is passed if the achieved score is no lower than 30/100.

  Knowledge of the Italian language is not required to foreign candidates.

  To access the interview it is mandatory to have achieved a score equal to or greater than 18/40 resulting from the score achieved in the Evaluation of Curriculum Vitae and academic / professional history / Publications, etc.

  Candidates may be allowed to be interviewed remotely with the use of a video conference application, pursuant to the prescriptions envisaged by Article 7, paragraphs 6 e 7 of the Call.

**Interview**

The date (and, if needed, the place) of the interview will be published at least, 10 days in advance on the UNIBS web site [https://www.unibs.it/en/node/1078](https://www.unibs.it/en/node/1078)

**Place and date of interview**

Precision Medicine Secretariat: segreteria.precmed@unibs.it

**Academic contact information of the PhD Programme**

[https://permalink.unibs.it/phd/38/generale](https://permalink.unibs.it/phd/38/generale)
[https://permalink.unibs.it/phd/38/general-en](https://permalink.unibs.it/phd/38/general-en)
[https://permalink.unibs.it/phd/38/precmed/it](https://permalink.unibs.it/phd/38/precmed/it)
[https://permalink.unibs.it/phd/38/precmed/en](https://permalink.unibs.it/phd/38/precmed/en)
[https://permalink.unibs.it/phd/38/comptrasv](https://permalink.unibs.it/phd/38/comptrasv)
[https://permalink.unibs.it/phd/38/langskprj](https://permalink.unibs.it/phd/38/langskprj)