Coordinator: Prof. Luca Vittuari  
Department of Civil, Chemical, Environmental, and Materials Engineering – DICAM  
Viale Risorgimento 2 - Bologna  
luca.vittuari@unibo.it

Starting date of the PhD Programme: 01/11/2019

Duration: 3 calendar years

Language of the PhD Programme: Italian and English

Mandatory stay abroad: Yes (6 months)

Curricula:

**1. Engineering of infrastructure, resources and territory**  
- Hydraulics and Hydraulic works  
- Sanitary engineering  
- Roads and Transports  
- Topography and cartography  
- Geoenvironmental and georesources  
- Applied geology

**2. Structural and Geotechnical Engineering**  
- Continuum mechanics  
- Structures  
- Geotechnics

**3. Chemical and process engineering**  
- Principles of chemical engineering  
- Chemical plants  
- Fundamental of Chemical Process Development  
- Industrial and technological chemistry

**4. Materials engineering and industrial biotechnology**  
- Fundamental Chemistry of Technologies  
- Materials Science and Technology  
- Industrial, food and environmental biotechnologies

### PhD positions and scholarships

<table>
<thead>
<tr>
<th>Position n.</th>
<th>Financial support</th>
<th>Description</th>
<th>Curriculum</th>
<th>Positions linked to research subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PhD Scholarship</td>
<td>Totally funded by the University of Bologna general budget</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PhD Scholarship</td>
<td>Totally funded by the University of Bologna general budget</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PhD Scholarship</td>
<td>Totally funded by the University of Bologna general budget</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>PhD Scholarship</td>
<td>Totally funded by the University of Bologna general budget</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>PhD Scholarship</td>
<td>Totally funded by the University of Bologna general budget</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>PhD Scholarship</td>
<td>Totally funded by the University of Bologna general budget</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>PhD Scholarship</td>
<td>Financed by the University of Bologna general budget by funds from the 5x100 campaign 2016</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PhD Scholarship</td>
<td>financed in full from the central budget under the &quot;Departments of Excellence&quot; initiative</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>PhD Scholarship</td>
<td>financed in full from the central budget under the &quot;Departments of Excellence&quot; initiative</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>PhD Scholarship</td>
<td>partly financed from the central budget and co-financed from the Department of Civil, Chemical, Environmental and Materials Engineering</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>PhD Scholarship</td>
<td>financed by MIUR under the &quot;Departments of Excellence&quot; initiative</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>PhD Scholarship</td>
<td>financed by MIUR under the &quot;Departments of Excellence&quot; initiative</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>PhD Scholarship</td>
<td>financed by MIUR under the &quot;Departments of Excellence&quot; initiative</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>PhD Scholarship</td>
<td>funded by the Department of Civil, Chemical, Environmental and Materials Engineering</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>PhD Scholarship</td>
<td>funded under the three-year High Competence Plan for research, technology transfer and entrepreneurship (POR FSE funds – Resolution n. 388 of 19/03/2018). The assignment of this scholarship is subject to the declaration of residence or domicile of the beneficiary in Emilia-Romagna.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>PhD Scholarship</td>
<td>financed by Basell Poliolefine Italia S.r.l.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>PhD Scholarship</td>
<td>financed in part by Geovest S.r.l. and co-financed by Centro Agricoltura Ambiente &quot;Giorgio Nicoli&quot; S.r.l.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>PhD Scholarship</td>
<td>financed by Romagna Acque - Società delle Fonti S.p.A.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Research Grant</td>
<td>provided by the Department of Civil, Chemical, Environmental, and Materials Engineering – DICAM, with a duration of 12 months renewable up to a maximum of 36 months and a gross percipient amount of €19,580</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Research Grant</td>
<td>provided by the Institute for Organic Synthesis and Photo-reactivity (ISOF) of the National Research Council (CNR). The research grant shall have a duration of 12 months renewable up to 36 months and a gross percipient amount of € 19,367</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Research Grant</td>
<td>provided by the Department of Civil, Chemical, Environmental, and Materials Engineering within the research project PON-PLACE, with a duration of 12 months renewable up to a maximum of 36 months and a gross percipient amount of €19,367</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>PhD Scholarship</td>
<td>funded by the Department of Civil, Chemical, Environmental and Materials Engineering</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>PhD Scholarship</td>
<td>funded by the Department of Civil, Chemical, Environmental and Materials Engineering</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Research Grant</td>
<td>provided by the Department of Civil, Chemical, Environmental, and Materials Engineering within the research project FIT4REUSE, with a</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Each position is reserved for one of the Curricula of the PhD programme. The above positions shall be awarded on the basis of the Curriculum for which the candidate has expressed preference in the statements made at the time of filling in the application and indicated on the title page of the research project. In the event that a candidate has not indicated the Curriculum, the Commission will proceed to assign him a Curriculum on the basis of the research project submitted.

Positions linked to specific research subjects: during the oral test, applicants may express their interest in one or more positions linked to specific research subjects. Considering the expressions of interest above, the Admission Board shall express its view on the suitability of the interested applicants, taking into account their specific skills, experience and aptitude.

Admission requirements
Please, see art. 2 of the Call for applications

Mandatory documents to be attached to the application
Please, see art. 3 of the Call for applications

Further qualifications that may be attached to the application, if in possession of the applicant (only qualifications attested by documents drawn up in Italian, English, French, German and Spanish shall be considered as valid and assessed by the Admission Board)

- Abstract of the second cycle master’s degree thesis. Undergraduate applicants may submit the draft of the thesis approved by their supervisor (please, note that abstracts cannot exceed 5,000 characters, including spaces and formula possibly used. The above figure does not include: the title of thesis, the outline, and images such as graphs, diagrams, tables etc. - where present)
- Multi-annual research project, with special emphasis on the activities to be completed during the first-year course. The proposal must meet the following requirements:
  - It must indicate in the cover page the selected Curricula (1, 2, 3 or 4) of the PhD Programme, for which the applicant is applying
  - It cannot exceed 20,000 characters, including spaces and formula possibly used. This figure does not include: the title of project, the outline, references and images (such as graphs, diagrams, tables etc - where present)
  - It must include: the state of the art; description of the project; expected results; lead-time for implementation; (proposed) criteria to be used to assess the findings obtained; references.
- The research projects that successful applicants shall carry out during their doctoral career may possibly differ from the project proposed at the application stage. This shall be defined together with the supervisor and approved by the Academic Board.
- Motivational letter. This must include the reasons prompting the applicant to attend the PhD Programme and those relevant experiences and research interests, that make the applicant suitable for the specific PhD Programme (3000 characters maximum, including spaces).
- List of the publications (monographs, articles published on scientific journals, volume’s chapters).
- List of the minor publications (conference papers, etc.).
- List of the abstracts and posters presented during national and international conferences, etc.
- Professional Master courses completed in Italy (1st or 2nd level) relevant to the PhD Programme.
- Postgraduate vocational training programmes/specialisation programmes relevant to the PhD Programme.
- Teaching activity carried out at university level.
- Research activity of any kind - whether basic, applied, translational, etc. - carried out in any capacity, including when covered by research grants, and as a staff member of research projects
- Work activity
- Vocational internships
- Curricular and non-curricular training and guidance internships
- Documents attesting the knowledge of foreign languages
- Study periods completed by students outside their countries of origin (e.g. Erasmus programme or other similar mobility programmes)
- Other qualifications attesting the suitability of the applicants (scholarships, prizes, etc)

Admission exams (art. 4 of the call for applications)

<table>
<thead>
<tr>
<th>Examination type</th>
<th>Schedule (please, note that applicants shall not receive any communication concerning the exams schedule)</th>
<th>Examination results publication (please, note that applicants shall not receive any communication concerning the publication of results)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifications and research project evaluation</td>
<td>Non-presential.</td>
<td>The results of the qualifications and research project evaluation shall be available online starting from the 17/06/2019 at the page <a href="http://studenti.unibo.it">http://studenti.unibo.it</a> (please, select: (please, select “summary of the requests in progress” - “see detail” and</td>
</tr>
</tbody>
</table>
### Oral examination

<table>
<thead>
<tr>
<th>Date</th>
<th>01/07/2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>Bologna, Via Terracini 28 Aula 1-030– Piano terra</td>
</tr>
<tr>
<td>Time</td>
<td>9 a.m.</td>
</tr>
</tbody>
</table>

Applicants can ask to take the exam remotely using Skype. For further details please refer to the relevant provision laid down in art. 4 of the Call for applications.

### Evaluation criteria

Points will be allocated to applications out of a total of 100 on the basis of the following weighting:

1. **Qualifications and research project**
   - Minimum for admission to the oral exam: 30 points
   - Maximum: 50 points
   
   Only qualifications relating to the last 5 calendar years prior to the calendar year of publication of the Call for applications shall be taken into consideration, with the exception of the University Degree (Diploma di laurea). Please, note that qualifications must be consistent with the PhD Programme.

   Points relating to qualifications shall be allocated on the basis of the following criteria:
   - Graduation final mark. Undergraduates shall be evaluated on the basis of the Weighted Average Mark (WAM): max 20 points
   - Publications: max 3 points
   - Other qualifications: max 2 points

   Points relating to the research project shall be allocated on the basis of the following criteria:
   - Scientific value and ground-breaking nature of the proposal: max 12 points
   - Description and structure of the proposal: max 8 points
   - Proposal feasibility: max 5 points

2. **Oral examination**
   - Minimum for inclusion in the final ranking list: 30 points
   - Maximum: 50 points

   Oral examination includes the presentation of the research project and is intended to assess the suitability of the applicant in respect of the pursuing of scientific research as well as the general knowledge of issues connected to the PhD Programme. During the oral examination, knowledge of English language shall be assessed.

   The oral examination is carried out in Italian or in English.

   Points relating to the oral examination shall be allocated on the basis of the following criteria:
   - Knowledge of the English languages: max 5 points
   - Research project presentation: max 25 points
   - General knowledge of issues connected to the PhD Programme: max 20 points

   Possible evaluation sub-criteria will be available on the [Unibo website](http://studenti.unibo.it), selecting the relevant PhD Programme → “PhD programme information” at the bottom of the page in the section “Notices”.

### Final ranking list and enrolment (arts.6 and 7 of the Call for applications)

After the publication of the results of the oral exam, the final ranking list will be available on the [Unibo website](http://studenti.unibo.it), selecting the relevant PhD Programme → “PhD programme information” at the bottom of the page in the section “Notices”.

Following the publication of the final ranking list, successful applicants must enroll on [http://studenti.unibo.it](http://studenti.unibo.it) by the deadline indicated on the [Unibo website](http://studenti.unibo.it), selecting the relevant PhD Programme → “PhD programme information”.