

PHD PROGRAMME TABLE 37TH CYCLE

Section "Available Positions and Scholarship" integrated on 22/04/2021

Section "Available Positions and Scholarship" integrated on 29/04/2021

Section "Available Positions and Scholarship" integrated on 20/05/2021

Section "Available Positions and Scholarship" integrated on 07/06/2021

PROGRAMME'S NAME	CIVIL, CHEMICAL, ENVIRONMENTAL AND MATERIALS ENGINEERING
DURATION	3 years
PROGRAMME START DATE	01/11/2021
LANGUAGE	Italian, English
MANDATORY STAY ABROAD	6 months
COORDINATOR	Prof. Luca Vittuari (luca.vittuari@unibo.it)
CURRICULA	<ol style="list-style-type: none"> 1. Engineering of infrastructure, resources and territory 2. Structural and Geotechnical Engineering 3. Chemical and process engineering 4. Materials engineering and industrial biotechnology
RESEARCH TOPICS	Detailed list at the bottom of the present document
PHD POSITIONS	23
ADMISSION PROCEDURE	Qualifications and research proposal evaluation Oral examination

Available Positions and Scholarships

Pos. n.	Financial Support	Description	Curriculum	Positions linked to research topics
1	PhD Scholarship	Totally funded by the University of Bologna general budget	1	
2	PhD Scholarship	Totally funded by the University of Bologna general budget	1	
3	PhD Scholarship	Totally funded by the University of Bologna general budget	2	
4	PhD Scholarship	Totally funded by the University of Bologna general budget	3	
5	PhD Scholarship	Totally funded by the University of Bologna general budget	3	
6	PhD Scholarship	Totally funded by the University of Bologna general budget	4	
7	PhD Scholarship	Co-funded by the University of Bologna general budget and the Department of Civil, Chemical, Environmental, and Materials Engineering	4	
8	PhD Scholarship	Totally funded by the University of Bologna general budget	1	
9	PhD Scholarship	Funded by the Department of Civil, Chemical, Environmental, and Materials Engineering	4	
10	PhD Scholarship	Totally funded by the University of Bologna general budget under the "Departments of Excellence" initiative	1	
11	PhD Scholarship	Totally funded by the University of Bologna general budget under the "Departments of Excellence" initiative	2	

12	PhD Scholarship	Totally funded by the University of Bologna general budget under the "Departments of Excellence" initiative	3	
13	PhD Scholarship	Totally funded by the University of Bologna general budget under the "Departments of Excellence" initiative	4	
14	PhD Scholarship	Funded by the Department of Civil, Chemical, Environmental, and Materials Engineering partially with funds made available by the project CO2 EPOC "Characterization and prediction of the CO2 effect on polymeric materials within the CO2 transport chain", within the Research Council of Norway's CLIMIT programme (CUP J55F20000230005; P.I. prof. Matteo Minelli)	3	CO2 transport properties in polymers for carbon capture and transport application
15	PhD Scholarship	Funded by the Department of Civil, Chemical, Environmental, and Materials Engineering	3	Multiscale Design of Semicrystalline polymers and composites for hydrogen handling
16	PhD Scholarship	Funded by the Department of Biological, Geological, and Environmental Sciences	1	Quality monitoring and hydraulic modeling integrated approach based on 3D virtual reality in water distribution network
17	PhD Scholarship	Funded by TPV compound S.r.l.	4	Development and optimization of biocompatible thermoplastic elastomeric compounds for medical devices
18	Research Grant	Funded by the Department of Civil, Chemical, Environmental, and Materials Engineering with funds made available by the EU project LIFE19 ENV/IT/000071 – LIFE SandBoil. The research grant will have a duration of 12 months, renewable up to 36 months, and gross percipient amount of € 21,169.00.	2	Development of an integrated system for the mitigation and monitoring of backward erosion piping in river embankments, within the LIFE SandBoil project - LIFE19/ENV/IT/000071
19	Industrial PhD position	Position reserved for employees of Keratech S.p.A.	4	
20	PhD Apprenticeship position	PhD apprenticeship position with ECOINNOVAZIONE (the applicant awarded of this position must sign the contract within 31/12/2021 and adhere to it until 31/10/2024. In case of suspension of the career, which will result in the postponement of the legal duration of the course, a new term shall be indicated). The doctoral activities will mainly take place in: ECOINNOVAZIONE S.r.l. (BO)	1	Quantitative assessment of sustainability (environmental, economic and social) by adopting a life cycle approach
21	Intersectoral PhD position	Position reserved for employees of ARPAE	1	Energy transition and resources' enhancement in Emilia-Romagna Region
22	PhD Scholarship	Funded by Fondazione Vittoriano Bitossi	4	Functionalization of ceramic surfaces

23	Research Grant	Provided by the Department of Civil, Chemical, Environmental, and Materials Engineering. The research grant will have a duration of 12 months, renewable up to 36 months, and gross recipient amount of € 19.367,00	3	Sustainability and safety of decarbonization scenarios based on hydrogen technologies
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Admission Exams

	DATE AND TIME	RESULTS
Qualifications and research proposal evaluation	Applicants' participation is not required	Available from 10/06/2021**
Oral examination	Date: starting from 21/06/2021 - 9.30 am CEST* Place: Remotely, using Microsoft Teams	Available from 05/07/2021**

* In case that the oral examination cannot be completed in one day due to the large number of applicants, the oral examination detailed schedule shall be made available on the webpage [Studenti Online](#) together with the results of the qualifications evaluation. **During the oral examination applicants may express their interest in one or more positions linked to specific research topics.**

** The **results of the admission exams** will be available on the webpage [Studenti Online](#) (select "summary of the requests in progress" > "see detail" and open the .pdf file at the bottom of the page. **No personal written communication will be sent to applicants concerning the examinations results.**

Required and Supporting Documents to be attached to the application

(only documents in Italian, English, French, German and Spanish shall be considered as valid and be assessed by the Admission Board)

Only qualifications obtained during the last 5 calendar years shall be taken into consideration, except for the University Degree. The Admission Board will assess the relevance of the supporting documents to the PhD Programme.

REQUIRED DOCUMENTS	
Identity document	Valid identity document with photo (i.e. identity card, passport)
Curriculum Vitae	No specific CV format is required. Please, upload the CV Summary, as first page of the CV (see form at the bottom of the present document).
Degrees	Documents attesting the awarding of the first and second cycle degrees, the exams taken and the marks obtained (see Art. 3 of the Call for Applications)
SUPPORTING DOCUMENTS	
Research proposal	Multi-annual research proposal, with special emphasis on the activities to be completed during the first-year course. The proposal must meet the following requirements: <ul style="list-style-type: none"> - it must mention on the first page the Curriculum (1, 2, 3 or 4) of the PhD Programme associated to the research proposal; - it cannot exceed 20.000 characters, including spaces and formulas, if present. This figure does not include: the title, the outline, references and images (such as graphs, diagrams, tables etc. - where present); - it must include: state of the art; project's description; expected results; timeline of the proposed research activities; outline of the proposed findings assessment criteria; references.
Thesis abstract	Abstract of the second cycle degree thesis . Graduands may submit the draft of their thesis (abstracts cannot exceed 5.000 characters, including spaces and formulas, if present. The above figure does not include: title, outline, images such as graphs, diagrams, tables etc. if present)
Personal Statement	The statement shall 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).

Publications	List of publications (i.e. monographs, articles on scientific journals, volume chapters), minor publications (conference papers, etc.) and abstracts and posters presented during academic conferences
Other documents	<ul style="list-style-type: none"> - University Master Courses (Master Universitari di I e II livello), Postgraduate vocational training programmes and/or specialisation programmes relevant to the PhD Programme - Teaching activity carried out at university level - Research activity - whether basic, applied, translational, etc. - carried out in any capacity, including when covered by research grants, and as a staff member of research units - Working activity - Professional or training internships - Language proficiency certificates - Periods of study abroad, outside the country of origin (e.g. Erasmus programme or other similar mobility programmes) - Other qualifications attesting the suitability of the applicants (scholarships, prizes, etc)

Evaluation criteria *

Scores will be expressed in points out of 100, as follows.

1. Qualifications and research proposal evaluation

Minimum score for admission to the oral examination: 30 points, Maximum score: 50 points

Qualifications evaluation	University degree final mark. Graduands shall be evaluated according to the Weighted Average Mark (WAM)	20 points max
	Publications	3 points max
	Other relevant documents	2 points max
Research proposal evaluation	Scientific value and innovative nature of the proposal	12 points max
	Description and structure of the proposal	8 points max
	Proposal feasibility	5 points max

2. Oral examination

Minimum score for eligibility: 30 points, Maximum score: 50 points

English proficiency	5 points max
Research project presentation	25 points max
General knowledge of issues encompassed by the PhD Programme	20 points max

Oral examination includes the presentation of the research proposal and aims to assess the suitability of the applicant for scientific research as well as the general knowledge of issues encompassed by the PhD Programme ([see the list of research topics at the bottom of the present document](#)). During the oral examination, English language proficiency shall be assessed. The oral examination is carried out in Italian or in English.

*Possible further evaluation criteria will be available on the [University website](#), selecting the relevant PhD Programme > "More information", at the bottom of the page in the section "Notices".

Final Ranking List and Enrollment

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 / or during the oral examination. In the event that a candidate has not indicated the Curriculum, the Commission will proceed to assign her/him a Curriculum on the basis of the research project submitted. Considering the expressions of interest for **topic-specific positions** (Art. 9 of the Call for Applications), the Admission Board will establish if the applicants can be considered eligible for the allocation of the positions linked to specific research topics, taking into account their skills, experience and aptitude. **In case of vacancies, for the replacement only applicants in the sub-ranking list linked to the specific topic or Curriculum shall be taken into consideration.**

After the publication of the results of the oral examination, the **final ranking list** will be available on the [University website](#), selecting the relevant PhD Programme > "More information", section "Notices" at the bottom of the page. Following the publication of the final ranking list, successful applicants shall **enroll** on [Studenti Online](#) by the deadline indicated on the [University website](#), selecting the relevant PhD Programme > "More information".

If a successful applicant withdraws from a position, the following applicant in the ranking list, who is also eligible for the specific position, will be contacted. During the replacement procedure, the new terms of enrollment shall be communicated via e-mail to the chosen applicant.

Research Topics

Curriculum 1: Engineering of infrastructure, resources and territory

- Hydraulics and Hydraulic works
- Sanitary engineering
- Roads and Transport Systems
- Topography and Cartography
- Geoengineering and Georesources
- Applied Geology

Curriculum 2: Structural and Geotechnical Engineering

- Continuum Mechanics
- Structures
- Geotechnics

Curriculum 3: Chemical and process engineering

- Principles of Chemical Engineering
- Chemical Plants
- Fundamental of Chemical Process Development
- Industrial and Technological Chemistry

Curriculum 4: Materials engineering and industrial biotechnology

- Fundamental Chemistry of Technologies
- Materials Science and Technology
- Industrial, Food and Environmental Biotechnologies

CV SUMMARY OF THE CANDIDATE (to be attached to the CV)

Surname _____

First name _____

Place and date of birth _____

Curriculum of interest for the Doctorate in Civil, Chemical, Environmental and Materials Engineering (select one):

- 1. Engineering of infrastructure, resources and territory
- 2. Structural and geotechnical engineering
- 3. Chemical and process engineering
- 4. Materials engineering and industrial biotechnology

TRAINING

Bachelor's degree (if more than one, repeat this section as needed)

Degree in: _____

Year of graduation: _____

University: _____

Country: _____

Formal duration of the course: _____ (years or fractions)

Weighted average of the marks obtained in the exams (GPA): _____

Minimum mark for sufficiency _____

Maximum possible rating _____

Average mark achieved by students¹: _____; reference set (e.g. degree course / subject area / university): _____

If the course provides for an overall final grade / verbal judgment (exams + final test) other than the GPA of the exams and the final test only:

Evaluation / mark achieved: _____

Judgment scale adopted / minimum and maximum achievable mark: _____

Master's degree or single-cycle master's degree (if more than one, repeat this section as needed)

Master in: _____

Year of graduation: _____

University: _____

Country: _____

Formal duration of the course: _____ (years or fractions)

Weighted average of the marks obtained in the exams (GPA): _____

Minimum mark for sufficiency _____

Maximum possible rating _____

Average mark achieved by students²: _____; reference set (e.g. degree course / subject area / university): _____

If the course provides for an overall final grade / verbal judgment (exams + final test) other than the GPA of the exams and the final test only:

Evaluation / mark achieved: _____

Judgment scale adopted / minimum and maximum achievable mark: _____

¹ If the information is available. The average mark or the mark of 50% percentile (median) can be reported [specify which one].

² If the information is available. The average mark or the mark of 50% percentile (median) can be reported [specify which one].