

PHD PROGRAMME TABLE 38TH CYCLE

Section “Available Positions and Scholarships” integrated on 16/05/2022

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| PROGRAMME'S NAME | EARTH, LIFE AND ENVIRONMENTAL SCIENCES |
| DURATION | 3 years |
| PROGRAMME START DATE | 01/11/2022 (DD/MM/YYYY) |
| LANGUAGES | Italian, English |
| MANDATORY STAY ABROAD | 3 months |
| COORDINATOR | Prof. Maria Giovanna Belcastro (maria.belcastro@unibo.it) |
| CURRICULA | 1. Geology 2. Biology |
| RESEARCH TOPICS | Detailed list at the bottom of the present document |
| PHD POSITIONS | 12 |
| ADMISSION PROCEDURE | Qualifications 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 | Biology | Detecting temporal and spatial trends of marine and freshwater communities in subtropical and temperate ecosystems with multivariate analyses |
| 2 | PhD Scholarship | Totally funded by the University of Bologna general budget | Geology | Seismic hazard assesment along selected tracts of the apenninic front in Emilia |
| 3 | PhD Scholarship | Funded by the Department of Biological, Geological, and Environmental Sciences, legacy of Canziani family | Biology | Fishing Genomes: Empowering and innovating Mediterranean fisheries with genomic toolbox |
| 4 | PhD Scholarship | Funded by the Department of Biological, Geological, and Environmental Sciences with funds made available by the project PRIN 2020BE2BC3_001 - CUP J33C22000040001 | Biology | MitoMicro -Mitochondrial MicroRNAs, a new perspective for mitochondrial function and their role in Eukaryotic evolution |
| 5 | PhD Scholarship | Funded by the Department of Biological, Geological, and Environmental Sciences with funds made available by the project H2020 SHOWCASE, GA 862480, Ref. Project PI: David Klejin, Ref. UNIBO: Davide Viaggi, Ref. BiGeA: Duccio Rocchini | Biology | Testing the reliability of biodiversity indicators derived from drone and satellite imagery |
| 6 | PhD Scholarship | Co-funded by the University of Bologna general budget and the Department of Biological, Geological, and Environmental Sciences | Biology | Understanding the effects of anthropogenic impacts on biodiversity and ecosystems' tipping points at different spatial and temporal scales |

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| 7 | PhD Scholarship | Totally funded by the University of Bologna general budget | Biology | Climate change effects on plant biodiversity of small Mediterranean islands |
| 8 | PhD Scholarship | Totally funded by the University of Bologna general budget | Biology | Tracing the evolution of human polygenic adaptive traits using high-resolution genomic data |
| 9 | PhD Scholarship | Totally funded by the University of Bologna general budget | Geology | Study of the crystal-chemical and physical properties of aragonite and calcite for specific applications in geology, biomineralogy and materials and climate sciences |
| 10 | PhD Scholarship | Totally funded by the University of Bologna general budget | Geology | Unfolding the spatial heterogeneity of the natural background level of arsenic in groundwater at the meso-scale |
| 11 | PhD Scholarship | Funded by the Department of Biological, Geological, and Environmental Sciences with funds made available by the project ERC CoG DeepSerpentinization, H ₂ , and high-pressure abiotic CH ₄ , GA 864045, CUP J39C20001010006, Ref. Alberto Vitale Brovarone | Geology | Petrological and geochemical study of H ₂ -rock interactions at high-pressure conditions |
| 12 | PhD Scholarship | Co-funded by the University of Bologna general budget and the Department of Biological, Geological, and Environmental Sciences | Geology | Climate change, sediment availability and mass wasting sediment dynamics in high-elevation Alpine settings |

Admission Exams

| | DATE AND TIME | RESULTS |
|----------------------------------|---|------------------------------------|
| Qualifications evaluation | Applicants' participation is not required | Available from 20/06/2022** |
| Oral examination | Date: starting from 05/07/2022 – 9.00 a.m. CEST* Place: In presence, Aula Magna di Anatomia, Department of Biological, Geological and Environmental Sciences, Via Selmi 3, Bologna. Remotely, using Microsoft Teams | Available from 15/07/2022** |

* 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 and research proposal 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

All the documents listed below **shall be drawn up in English or in Italian**. In case of documents originally issued in any other language (e.g. identity document, qualifications), an official English translation is required.

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 | |
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| Identity document | Valid identity document with photo (i.e. identity card, passport) |

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| Curriculum Vitae | No specific CV format is required |
| 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 | |
| Thesis abstract | Abstract of the second cycle degree thesis . Graduands applicants may submit the draft of the thesis. Abstracts cannot exceed 5,000 characters, including spaces and formula possibly used. The above figure does not include: the title of the thesis, the outline, references, and images such as graphs, diagrams, tables etc. |
| Reference letter/s | No more than 2 reference letters signed by Italian and international academics and professionals in the research field, which do not form part of the Admission Board, attesting the suitability of the applicant and his/her interest in the scientific research. Letters shall be uploaded following the procedure detailed in the Call for Applications (Art. 3.2). |
| 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 | Lists of publications (i.e. monographs, articles on scientific journals), minor publications (conference papers, etc.), abstracts and posters presented during national and international conferences, etc. |
| Other documents | <ul style="list-style-type: none"> - Postgraduate vocational programmes and/or specialisation programmes relevant to the PhD Programme - Specialisation thesis abstract (max 5,000 characters) - Teaching activity carried out at academic 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 - Curricular and non-curricular training internships - Documents attesting the applicant's foreign languages proficiency - Periods of study abroad, completed by applicants 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.) |

Evaluation criteria*

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

1. Qualifications evaluation

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

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| Second cycle degree (Master's) final mark. Graduands shall be evaluated according to the Weighted Average Mark (WAM) | 25 points max |
| Publications | 5 points max |
| Personal statement | 10 points max |
| Reference letter/s and other evaluable documents | 10 points max |

2. Oral examination

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

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| English language proficiency | 10 points max |
| General knowledge of issues encompassed by the PhD Programme | 40 points max |

Oral examination 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, the applicant's English proficiency shall be assessed.

The oral examination is carried out in Italian or 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".

Research Topics

Curriculum 1: Geology

- Stratigraphy and structural geology
- Geosphere-biosphere interactions
- Geochemistry, magmatism and metamorphism
- Marine geology
- Environmental geology
- Geological hazards and natural resources
- Engineering geology, hydrogeology and geomorphology

Curriculum 2: Biology

- Molecular and cellular biodiversity
- Animal biodiversity and evolution
- Plant biodiversity and evolution
- Human biodiversity and evolution
- Population biology and ecology
- Environmental monitoring
- Marine biology
- Computational biology