**PhD Programme Table - 38th cycle**

**NRRP “National Recovery and Resilience Plan” Call for Applications**



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| PROGRAMME’S NAME | ASTROPHYSICS |
| ASSOCIATED PARTNERS  Pursuant to art. 3 para 2 lett. b) of the MD n. 226/2021 | Istituto Nazionale di Fisica Nucleare - INFN |
| DURATION | 3 years |
| PROGRAMME START DATE | 01/11/2022 (DD/MM/YYYY) |
| LANGUAGES | English |
| COORDINATOR | Prof. Andrea Miglio ([andrea.miglio@unibo.it](mailto:andrea.miglio@unibo.it)) |
| RESEARCH TOPICS | [Detailed list at the bottom of the present document](#Tematiche) |
| PhD POSITIONS | 1 |
| ADMISSION PROCEDURE | Qualifications evaluation Oral examination |

Available Positions and Scholarships

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| Pos. n. | Financial Support | Description | Positions linked to research topics |
| 1 | ***PhD Scholarship***  ***Ex M.D. 351/2022 - PNRR research*** | Funded by the EU - NextGenerationEU with funds made available by the National Recovery and Resilience Plan (NRRP) Mission 4, Component 1, Investment 4.1 (MD 351/2022) – PNRR research | One of the following research topics:   1. in Globular Clusters - Supervisor Prof. R. Francesco Ferraro; 2. Data-driven approaches to stellar astrophysics in the era of large astronomical surveys - Supervisor Prof. Andrea Miglio; 3. Probing the deep cosmos with future gravitational waves and galaxy space missions - Prof. Michele Ennio Maria Moresco |

Applicants awarded with Ex M.D. 351/2022 or Ex M.D. 352/2022 PhD scholarships shall have specific obligations (i.e. mandatory research periods abroad and/or in a firm) during their PhD programme. For detailed information, refer to the Call for Applications, articles 1.2 and 1.3, and to the text of the law.

For any other eventual PhD positions, a 3-month research period abroad is mandatory.

Admission Exams

The admission exams detailed schedule shall be published **starting from July 12th, 2022:**

* on the [University website](https://www.unibo.it/en/teaching/phd/2022-2023), selecting the relevant PhD Programme > “More information”, at the bottom of the page in the section “Notices”;
* on [Studenti Online](https://studenti.unibo.it/sol/welcome.htm?siteLanguage=en) (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**.

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 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.

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| REQUIRED DOCUMENTS | |
| Identity document | Valid identity document with photo (i.e. identity card, passport) |
| 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 3 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 on [Studenti Online](https://studenti.unibo.it/sol/welcome.htm?siteLanguage=en), detailed in the Call for Applications (Art. 3.2). |
| Publications | Lists of publications (i.e. monographs, articles on scientific journals) |
| Other documents | * 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 * Curricular and non-curricular training internships * Documents attesting the knowledge of foreign languages * Study periods 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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| First (Bachelor’s) and Second cycle degree (Master’s) final mark. Graduands shall be evaluated according to the Weighted Average Mark (WAM) | 30 points max |
| Publications | 2 points max |
| Curriculum Vitae evaluation (e.g. thesis abstract, reference letters, other qualifications) | 18 points max |

1. **Oral examination**

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

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| General knowledge of issues encompassed by the PhD Programme | 50 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](#Tematiche) 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](https://www.unibo.it/en/teaching/phd/2022-2023), selecting the relevant PhD Programme > “More information”.

Research Topics

* Stellar populations in the Local Group
* Populations, chemistry and dynamics of stellar clusters
* Stellar and chemical evolution of galaxies
* Formation and evolution of galaxies and AGN
* Radioastronomy
* High energy astrophysics
* Astronomical technology
* Galactic dynamics
* Galaxy Clusters, Large-scale structure of the Universe, Cosmology