PHD PROGRAMME TABLE 37TH CYCLE

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

Section "Available Positions and Scholarship" modified on 06/05/2021

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

Section "Available Positions and Scholarship" integrated on 21/05/2021

PROGRAMME'S NAME	DATA SCIENCE AND COMPUTATION
ASSOCIATED PARTNERS pursuant to art. 2, para 2, lett. d) of the M.D. n. 45/2013	Fondazione Istituto Italiano di Tecnologia - IIT
DURATION	4 years
PROGRAMME START DATE	01/11/2021
LANGUAGES	Italian, English
MANDATORY STAY ABROAD	3 months
COORDINATOR	Prof. Andrea Cavalli (andrea.cavalli@unibo.it)
CURRICULA	N/A
RESEARCH TOPICS	Detailed list at the bottom of the present document
PhD POSITIONS	13
ADMISSION PROCEDURE	Qualifications and research proposal evaluation Oral examination

Available Positions and Scholarships

Pos. n.	Financial Support	Description	Positions linked to research topics
1	PhD Scholarship	Totally funded by the University of Bologna general budget	
2	PhD Scholarship	Totally funded by the University of Bologna general budget	
3	PhD Scholarship	Totally funded by the University of Bologna general budget	
4	PhD Scholarship	Funded by Istituto Italiano di Tecnologia (IIT)	Personalized medicine, Computational Chemistry & Physics, Genomics and Bioinformatics
5	PhD Scholarship	Funded by Istituto Italiano di Tecnologia (IIT)	Personalized medicine, Computational Chemistry & Physics, Genomics and Bioinformatics
6	PhD Scholarship	Funded by Istituto Italiano di Tecnologia (IIT)	Personalized medicine, Computational Chemistry & Physics, Genomics and Bioinformatics
7	PhD Scholarship	Funded by Istituto Nazionale di Fisica Nucleare (INFN)	Computational physics
8	PhD Scholarship	Funded by Istituto Nazionale di Fisica Nucleare (INFN)	Computational physics
9	PhD position without scholarship	Position reserved for PhD candidates enrolled at the Politecnico di Milano - POLIMI, 33rd cycle, to one of the following PhD programmes: "Ingegneria dell'Informazione", "Modelli e Metodi Matematici per	

		l'ingegneria" and "Ingegneria Gestionale". Under the condition that each candidate has been authorized (nulla osta) by the Academic Board POLIMI to the programme of double degree, referred to in art.1 of the agreement between the University of Bologna and the Politecnico di Milano of 2017	
10	PhD Scholarship	Funded by Istituto Italiano di Tecnologia (IIT)	Personalized medicine, Computational Chemistry & Physics, Genomics and Bioinformatics
11	Research Grant	Provided by Centro Alma Human AI. The research grant will have a duration of 12 months, renewable up to 48 months, and gross percipient amount of € 19.367	Adaptive and distributed continual learning on deeply embedded systems
12	Industrial PhD	Position reserved for emplyees of University of Applied Sciences and Arts Western Switzerland (HES-SO)	
13	PhD Scholarship	Funded by Istituto Giannina Gaslini	Studies of the scale-up and implementation of the digital Survivorship Passport to improve people-centered care for childhood cancer survivors

Admission Exams

	DATE AND TIME	RESULTS
Qualifications and research proposal evaluation	Applicants' participation is not required	Available from **01/06/2021****
Oral examination	Date: starting from 14/06/2021 – 9.00 am CEST* **Place**: remotely, using Microsoft Teams	Available from **25/06/2021****

* 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 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

(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
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	

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Strada Maggiore 45 | 40125 Bologna | Italia | Tel. + 39 051 2094620 | aform.udottricerca@unibo.it

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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: - it cannot exceed **20,000 characters**, including spaces and formula possibly used. This figure does not include: the title of proposal, the outline, references and images (such as graphs, diagrams, tables etc - if present); - it must include: the state of the art; description of the proposal; expected results; references.
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, and images such as graphs, diagrams, tables, etc. - if present).
Publications	Lists of publications (i.e. monographs, articles on scientific journals), minor publications (conference papers, volume's chapters etc.), abstracts and posters presented during national and international conferences, etc.
Other documents	- University Master Courses (Master Universitari di I e II livello) relevant to the PhD Programme. - Postgraduate vocational training programmes and/or specialisation programmes relevant to the PhD Programme. - Summary of the thesis defended within the framework of Specialization Schools. The summary cannot exceed 5,000 characters. - 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 activities. - Vocational internships. - Curricular and non-curricular training and guidance internships. - 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)	25 points max
	Publications	4 points max
	Scholarships, research grants and/or research activities (including participation) at universities, public/private bodies carried out after graduation but within the last 5 calendar years	2 points max
	Other qualifications attesting the applicant's training and skills	2 points max
	Participation to conferences as lecturer or audience	1 point max
Research proposal evaluation	Scientific value and ground-breaking nature of the proposal	6 points max
	Description and structure of the proposal	6 points max
	Proposal feasibility	4 points max

2. Oral examination

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

English language proficiency	10 points max
Research proposal presentation	15 points max
General knowledge of issues encompassed by the PhD Programme	25 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 knowledge of one of the following foreign languages shall be assessed: English, Spanish, French, or German. **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".

Final Ranking List and Enrollment

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.
Considering the expressions of interest for **topic-specific positions** (see Art. 9 of the Call for Applications), the Admission Board shall express its view on the suitability of the interested applicants, taking into account their specific skills, experience and aptitude.
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

- Quantitative Finance and Economics
- Materials and Industry 4.0
- Genomics and bioinformatics
- Personalised medicine
- Hardware and Infrastructure
- Machine learning and deep learning
- Computational physics
- Computational chemistry
- Big Data, Smart Cities & Society