PHD PROGRAMME TABLE 40TH CYCLE

Section "Available Positions and Scholarships" integrated on 10/06/2024

Section "Available Positions and Scholarships" integrated on 13/06/2024

PROGRAMME'S NAME	COMPUTER SCIENCE AND ENGINEERING
DURATION	3 years
PROGRAMME START DATE	01/11/2024 (DD/MM/YYYY)
LANGUAGES	English
COORDINATOR	Prof. Ilaria Bartolini (ilaria.bartolini@unibo.it)
PhD POSITIONS	14
ADMISSION PROCEDURE	Qualifications and research proposal evaluation Oral examination

Available Positions and Scholarships

Pos. n.	Financial Support	Description	Positions linked to a specific research topic
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*	Totally funded by the University of Bologna general budget	
5	*PhD scholarship*	Totally funded by the University of Bologna general budget	
6	*PhD scholarship*	Totally funded by the University of Bologna general budget	
7	*PhD scholarship*	Funded by the Department of Computer Science and Engineering with funds made available by the project Horizon Europe - European Bus Rapid Transit of 2030: electrified, automated, connected (eBRT2030) - G.A. 101095882 - Prof. Mirri - CUP J53C22004840006	Innovations for urban and sustainable mobility: IoT, Digital Twin and Machine Learning for dynamic public transport prediction and management
8	*PhD scholarship*	Funded by Agenzia per la Cybersicurezza Nazionale - Determina, prot. n. 13554 of 30/04/2024 - PhD programmes in the field of cybersecurity – 40th cycle	Machine Learning applied to network security using programmable data planes to monitor and mitigate attacks even on devices with limited

			capabilities (IoT) and mobile networks
9	*PhD scholarship*	Funded by Agenzia per la Cybersicurezza Nazionale - Determina, prot. n. 13554 of 30/04/2024 - PhD programmes in the field of cybersecurity – 40th cycle	Modelling attacks on industrial control systems and methods for their identification and detection
10	*PhD scholarship*	Funded by Agenzia per la Cybersicurezza Nazionale - Determina, prot. n. 13554 of 30/04/2024 - PhD programmes in the field of cybersecurity – 40th cycle	Design and development of an IoT cyber-security testing platform
11	*Research Grant*	Provided by CIRI ICT - Interdepartmental Centre for Industrial ICT Research with funds made available by the programme PR FESR – Action 1.1.2 – Call for strategic industrial research projects addressing priority areas of the Intelligent Specialisation Strategy – Project "Cybersecurity for Smart Industry C4SI" (CUP: E67G22000630003). The research grant will have a duration of 12 months, renewable up to 36 months, and gross percipient amount of €22,699.02 per year.	New strategies for the cyber defence
12	*PhD scholarship*	Funded by ASI - Agenzia Spaziale Italiana	Development of algorithms for the identification and classification of astrophysical transients in the data collected by the COSI experiment
13	*PhD scholarship*	Funded by CINECA - Consorzio Interuniversitario	Artificial intelligence systems for innovation in education
14	*PhD scholarship*	Funded by SINA S.p.A.	Development of innovative Computer Vision and Machine Learning techniques for the detection and monitoring of motorway infrastructure

The number of positions and scholarships may be incremented in case additional funding becomes available, notwithstanding the terms of the application process in the Call. Any amendment, update or integration of the Programme Table will be published on the University website, even after the Call for applications has expired. Any further PhD positions shall be integrated in the PhD Programme Table within ten days before the oral examination.

All PhD positions winners shall fulfill the learning and research obligations decided by the Academic Board and the obligations foreseen in the relevant regulations, funding schemes and eventual agreements, and in the Call for Applications.

Admission Exams

	DATE AND TIME	RESULTS
Qualifications evaluation	Applicants' participation is not required	Available from **10/07/2024**
Oral examination	**Date**: starting from **17/07/2024** – **9.00 a.m. CEST** **Place**: In presence, Aula Busi, Department of Computer Science and Engineering, Mura Anteo Zamboni 7, Bologna. Remotely, using Microsoft Teams	Available from **22/07/2024**

The results of the qualifications and research proposal evaluation shall 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) together

with the oral examination detailed schedule. **No personal written communication will be sent to applicants concerning the examinations results**.

During the oral examination, applicants may express their interest in one or more positions linked to specific research topics.

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.

REQUIRED DOCUMENTS	
Identity document	Valid identity document with photo (i.e. identity card, passport)
Curriculum Vitae	The Curriculum Vitae shall contain **on the first page the CV Summary**, duly filled, downloadable in .docx from the University website (select the PhD Programme → "*More information*", then check "*Notices*" at the bottom of the page). Versions of the Summary modified in content and/or in the order in which they are presented will not be accepted: **therefore, it is mandatory to use only and exclusively the form provided by the University. If the uploaded Curriculum does not contain such a Summary as per the instructions above, the Admission Board will not proceed to the evaluation of any title provided by the applicant and he/she will be automatically excluded from the oral examination.**
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)
Research proposal	Multi-annual research proposal (**drawn up in Italian or in English**), with special emphasis on the activities to be completed during the first-year course. The proposal must meet the following requirements: - it must be written following the **Research Proposal Template**, downloadable in .docx from the University website (select the PhD Programme → "More information", then check "Notices" at the bottom of the page). **Versions of the research proposal modified in content and/or in the order in which they are presented will not be accepted**, therefore it is mandatory to use only and exclusively the form provided by the University. **Should the research proposal not be drawn up as per the instructions above, the Admission Board will not proceed to assess any of the qualifications provided by the candidate and he/she will be automatically excluded from the oral examination;** - **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; articulation of the proposal and implementation times; references. The research proposals that successful applicants shall carry out during their PhD career may possibly differ from the one proposed at the application stage. This shall be defined together with the supervisor and approved by the Academic Board. The name of the possible PhD thesis supervisor should not be given, as this will only be identified by the PhD Academic Board after enrolment.
SUPPORTING DOCUMENTS	
Thesis abstract	Abstract of the **second cycle degree thesis (drawn up in Italian or in English)**. 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, detailed in the Call for Applications (Art. 3.2).
Publications	Lists of publications (i.e. monographs, articles on scientific journals) and minor publications (conference papers, etc.), in **Italian or in English**
Other documents	- Postgraduate vocational programmes and/or 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 - 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 and research proposal evaluation

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

Second cycle degree (Master's) final mark. Graduands shall be evaluated according to the Weighted Average Mark (WAM)	10 points max
Consistency of the Second cycle degree final thesis with the main topics of the PhD programme	10 points max
Publications	5 points max
Curriculum Vitae, reference letters, other qualifications	10 points max
Research proposal (scientific value, structure and feasibility of the proposal)	15 points max

2. Oral examination

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

English language proficiency	10 points max
Research proposal presentation and general knowledge of the PhD programme's main research topics and of the research topics linked to the available PhD positions	40 points max

Oral examination aims to assess the suitability of the applicant for scientific research as well as the general knowledge of the PhD programme's main research topics and of the research topics linked to the available PhD positions. **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".