PHD PROGRAMME TABLE 38TH CYCLE

Section "Available Positions and Scholarships" integrated on 25/05/2022

Section "Available Positions and Scholarships" integrated on 07/06/2022

Section "Available Positions and Scholarships" integrated on 13/06/2022

PROGRAMME'S NAME	COMPUTER SCIENCE AND ENGINEERING
DURATION	3 years
PROGRAMME START DATE	01/11/2022 (DD/MM/YYYY)
LANGUAGES	English
MANDATORY STAY ABROAD	3 months
COORDINATOR	Prof. Davide Sangiorgi (davide.sangiorgi@unibo.it)
CURRICULA	N/A
RESEARCH TOPICS	Detailed list at the bottom of the present document
PhD POSITIONS	11
ADMISSION PROCEDURE	Qualifications and research proposal evaluation Oral examination

Available Positions and Scholarships

Pos. n.	Financial Support	Description	
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	Research Grant	Provided by the Department of Computer Science and Engineering. The research grant will have a duration of 12 months, renewable up to 36 months and gross percipient amount of €19,367	Regional Database for the Improvement of the Care Path in the Emergency Department
5	Research Grant	Provided by the Department of Computer Science and Engineering. The research grant will have a duration of 12 months, renewable up to 36 months and gross percipient amount of €19,367	Languages and methods for the customization of function scheduling in Serverless-Computing
6	Research Grant	Provided by the Department of Computer Science and Engineering with funds made available by the project TUPLES, ref. prof. Michele Lombardi. The research grant will have a duration of 12 months, renewable up to 36 months and gross percipient amount of €19,367	Trustworthy Hybrid Methods for Planning and Scheduling
7	PhD Scholarship	Totally funded by the University of Bologna general budget	
8	PhD Scholarship	Totally funded by the University of Bologna general budget	
9	PhD Scholarship	Co-funded by the University of Bologna general budget and by the Department of Computer Science and Engineering	
10	Research Grant	Provided by the Department of Computer Science and Engineering with funds made available by the project H2020 Stairwai (ref. Prof. Milano). The research grant will have a duration of 12 months, renewable up to 36 months, and gross percipient amount of €19,367	Fair-by-design methodologies for bias free AI systems

11	Research Grant	Provided by the Department of Modern Languages, Literatures, and Cultures with funds made available by the project H2020 (G.A 10114746 - Ref. Prof. Presutti). The research grant will have a duration of 12 months, renewable up to 36 months, and gross percipient amount of €23,787	Automatic generation of knowledge graphs from unstructured text for advanced question answering.

Admission Exams

	DATE AND TIME	RESULTS
Qualifications and research proposal evaluation	Applicants' participation is not required	Available from **15/06/2022****
Oral examination	**Date**: starting from **27/06/2022** – **8.30 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 **07/07/2022****

* 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 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	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	
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 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.
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

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	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 evaluation (e.g. 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 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

- Distributed systems and algorithms
- Programming languages and systems
- Computer networks and applications
- Software engineering
- Formal methods and semantics of programming languages
- Artificial intelligence
- Real-time and fault-tolerant systems
- Parallel algorithms and probabilistic algorithms
- Image Processing
- Bioinformatics and biometric systems
- Information systems and databases
- Concurrency theory
- Security
- Logical foundations of computer science
- Multimedia systems