







### Amministrazione centrale

Area Ricerca e Trasferimento Tecnologico Settore Dottorati, Assegni e Borse di Ricerca

D.R. Rep. n. 1755/2022 - Prot. n. 147813 Attachments 2 of 22/12/2022

Year 2022 Tit. III Cl. 6 Fasc. 7

# PUBLIC COMPETITION FOR ADMISSION TO CYCLE XXXVIII Ph.D. COURSES - ACADEMIC YEAR 2022/2023 N. 2 POSITIONS WITH GRANTS FUNDED BY THE NATIONAL RECOVERY AND RESILIENCE PLAN

Mission 4 – Component 2 – Investment 1.4 "National Center" National Centre for HPC, Big Data and Quantum Computing"

# THE RECTOR OF THE UNIVERSITY OF L'AQUILA

**IN FORCE OF** law n. 168, May 9, 1989, concerning the establishment of the "Ministero dell'Università e della Ricerca Scientifica e Tecnologica";

IN FORCE OF law n. 476, August 13, 1984, establishing rules on university scholarships;

IN FORCE OF law n. 398, November 30, 1989, establishing rules on university scholarships;

**IN FORCE OF** article n. 4 of law n. 210, July 3, 1998, which provides that the universities, with their own regulation establish their Ph.D. schools;

IN FORCE OF article 19 of law n. 240, December 30, 2010;

**IN FORCE OF** D.P.C.M. of April 9, 2001 "Disposizioni per l'uniformità del trattamento sul diritto agli studi universitari" according to article n. 4 of law n. 390, December 2, 1991;

IN FORCE OF legislative decree n. 68, March 29, 2012;

**PURSUANT TO** DD. MM. 509/1999 e 270/2004 which provides rules about the didactic autonomy of Universities:

**PURSUANT TO** D.M. n. 226 of December 14, 2021 "Regolamento recante modalità di accreditamento delle sedi e dei corsi di dottorato e criteri per la istituzione dei corsi di dottorato da parte degli enti accreditati";

**PURSUANT TO** D.M. n. 247 of February 23, 2022 which restated the gross annual amount of Ph.D. scholarships;

**PURSUANT TO** the rules for the admission of foreign students to the university course published on MUR website;

**PURSUANT TO** the Regulation of the Ph.D. Schools of the University of L'Aquila, renewed by Rectoral Decree n. 787/2022 of 2022, June 1<sup>st;</sup>

**HAVING REGARD TO** Ethical Code and "Codice di Comportamento" of University of L'Aquila issued by D.R. n. 734/2020 of 2020, July 27<sup>th</sup>;

HAVING REGARD TO the minutes of the Academic Senate meeting of 19/05/2022;

**HAVING REGARD TO** the minutes of the Board of Administration meeting of 19/05/2022;

**HAVING REGARD TO** the note received from Prof. Rubino, supervisor of Spoke 5 dedicated to "Environment & Natural Disasters" of the Research Programme CN00000013 "National Centre for HPC, Big Data and Quantum Computing", acquired as prot. n. 142570 of 12/12/2022, whit which he asks to call a new









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public competition, for the assignment of 2 positions with scholarship, one for the Ph.D. Course in Information and communication technologies and one for Ph.D. Course in Mathematics and modelling;

**HAVING AKNOWLEDGE** that the 2 positions are entirely funded by the National Center, as established by the Directorial Decree n. 1031 of 2022, June 17<sup>th</sup>, in particular they are funded by PNRR MUR resources – M4C2 – Investment 1.4 – Advise "National Center";

**HAVING REGARD TO** the minutes of the Academic Senate and the Board of Administration of 2022, December 13<sup>th</sup> and 2022, December 14<sup>th</sup> respectively;

### HEREBY DECREES ART. 1 Public selection

- 1. Public competition procedures based on qualifications and examinations for admission to the Ph.D. Courses XXXVIII cycle Academic Year 2022/2023 in:
- Information and communication technologies;
- Mathematics and modeling;
- in connection with Spoke 5 of the National Center "National Centre for HPC, Big Data and Quantum Computing", which provides 2 positions funded by the National Recovery and Resilience Plan, Mission 4 Component 2 Investment 1.4.

The courses' duration is three years and the activities will start by 1st March 2023.

2. The forms attached to this announcement and which are an integral part of it, indicate the positions and the scholarships available, the curriculum when provided, the research topics, the methods and criteria for selecting candidates, the dates for the examinations.

# ART. 2 Requirements for Access

- 1. Those who, at the expiry of the deadline for submitting the application for admission, are in possession of one of the following qualifications can participate in the selection, without age or citizenship restrictions:
- a) master's or specialist degree;
- b) degree from the system prior to the Ministerial Decree n. 509/1999 (old system);
- c) second level academic qualification issued by institutions belonging to the AFAM (Higher Artistic and Musical Education) sector;
- d) qualification obtained abroad, recognized as equivalent to the aforementioned second level academic qualifications.

The academic qualification held by the candidate must refer to a course with a duration of at least 4 years and must allow the access to a Ph.D. course in the country in which it was awarded.

Candidates holding a foreign Degree who have not yet obtained certified equivalency required for the admission to the Ph.D. course, must include the following documents in their application (necessary for the Examination Commission to evaluate the Degree as conforming to requirements):

- a copy of the Degree certifications obtained (Bachelor e Master Degree), with a transcript of records of the exams taken and an Italian or English translation provided by the applicant under his/her responsibility;
- any other documentation deemed useful for the qualification assessment by the Examination Committee (Diploma Supplement, Diploma translated and legalized by the competent Italian Diplomatic Authorities located on the Country where the Diploma has been achieved, Declaration of value, etc...).









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Eligibility of the qualification will be verified by the Examination Committee and will only be granted for the sole purpose of admission to the chosen Ph.D. course.

2. Candidates who, on the expiry date of this announcement, do not possess the requisites referred to in paragraph 1, will be admitted to the selection with reserve. The qualification required for access to PhD courses must be achieved by the completion date of the enrollment.

# ART. 3 Applications, terms and conditions

1. The application form may only be submitted using the dedicated online procedure, available at: <a href="https://pica.cineca.it/univag/centronazionaledott38">https://pica.cineca.it/univag/centronazionaledott38</a>.

Applications must be submitted starting from 11 a.m. (CEST) of 2022, December 23<sup>rd</sup> and no later than 1 p.m. (CEST) of 2022, January 24<sup>th</sup>.

The application must be signed.

The absence of the signature, or of the handwritten signature, implicates the exclusion from the public competition.

There are 3 methodologies to sign it and the candidate must select one of them and read carefully they directions.

- By digital signature using smart card, USB token or remote signature which allow the owner to sign general documents by means of a signature software or a Remote Signature web portal made available by the Auditor. Those who have a Digital Signature smart card or USB token shall verify that they are compatible with the Digital Signature system integrated in the system server. If so, the owner may sign the application directly in the system server (e.g. ConFirma);
- Those who do not have compatible digital signature devices and the Remote Digital Signature Owners who may access a web portal for signing general documents shall save in their own PC the .pdf file generated by the system and, without modifying it, digitally sign it in CAdES format. A .p7m file will be generated, which shall be saved and uploaded again in the system. Any editing to the file before signing with the Digital Signature shall interfere with the automatic check of correspondence between the content of such a document and the original, and this will bring to the application exclusion;
- If none of the above-mentioned options can be used candidates shall save in their own PC the .pdf file generated by the system and, without modifying it, print and sign it with full original signature in the last page of the printed document. A scanned .pdf copy of such a document shall be produced and the file thus obtained shall be uploaded to the system.

In case the access to the platform is via SPID, it is not necessary to sign the application with one of the aforementioned methods.

Candidates intending to apply for more than one Course must complete a separate application for each chosen Course.

- 2. When filling the application, candidates must:
- select the chosen Ph.D. course;
- select the curriculum, if provided;
- select "ordinary seat whit scholarships";
- select the research topic for themed scholarships;









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- attach the qualifications required and indicated in the form of the Ph.D. course and a photocopy of the identity document.

### The lack of a photocopy of the identity document is cause for exclusion from the selection.

In case the candidate wants to apply for both positions, he/she must attach the specific qualifications required in the forms attached to the announcement. **All documentation must be attached in pdf format**.

For all legal purposes, the application is to be considered as a self-certification of the data included therein, in accordance with articles 46 and 47 of Italian Presidential Decree no. 445/2000 and subsequent amendments.

- 3. The application is automatically sent to the University when the online procedure has finally been completed. Therefore, no paperwork needs to be delivered or sent to the University's offices.
- 4. Each candidate can ask for reference letters. The compiling advise will be sent to the referee only after final closing of application.

The **referee** will be automatically advised by the system and he/she must compile the reference letter and send it through the online procedure within no later than 5 p.m. of 2023, January 26<sup>th</sup>.

### Reference letters attached by the candidate will not be taken into consideration.

5. Candidates are invited to complete applications for the selection process well in advance of the closing date specified in this call.

Candidates are responsible for verifying that the procedure is completed correctly. No complaints will be accepted for any malfunctioning of the IT system due to overload experienced by candidates near the closing date

After the deadline of the call it will no longer be possible to change the application for participation.

In force of Italian Law no. 104/1992, as amended by Italian Law no. 17/1999, disabled candidates may request an individual examination (with the use of aids, any additional time required, etc.) to complete the required entry examinations.

This request should be done by following the instructions available in the online procedure for application.

According to the art. 15 of Law 183/2011 and following the interpretation done by the Directive of the Presidency of the Council of Ministers, signed by the Minister of Public Administration and Simplification, n. 61547 of 22/12/2011, the University can't accept certifications issued by other Public Administrations. Therefore, if the titles declared by candidates and attached to the application for admission to the competition, have been issued by Italian public universities, they must only be self-certified.

Following the rules on self-certification, the University will verify the veracity of the self-certification, pursuant to the Consolidated Law on Finance. 445/2000.

# ART. 4 Examinations

1. The examination procedures and the dates of the exams are indicated in the forms attached to this announcement, as per art. 1, co. 2 of this call.









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The date of the oral exam, indicated in the forms attached to this announcement, is to be regarded as official legally binding calls.

Candidates will therefore not receive any other sort of call or summons by the University as to the exams prescribed for the Ph.D. Course they have applied for.

The candidate does not have to be present during qualification assessment procedures.

Any changes in dates and times will be made public on the University website.

The candidate who is not present at the time and place indicated for the examination will automatically be excluded from the competition.

2. The oral exams will be held by following the modality specified in the forms attached to this announcement.

The electronically oral exams will be held by using web teleconferencing (e.g. Microsoft Teams, Skype). The candidate is required to provide contact information in their application and guarantee the use of a web-cam to allow the Examination Committee to verify the candidate's identity.

The oral exam can be held in English.

If, for health reasons connected to the COVID-19 emergency, the examination tests cannot be carried out in the manner indicated in the art. 1, co. 2 of this call, it will be communicated by means of a notice that can be consulted on the University website.

# ART. 5 Examination Committee and competition rules

1. The Examinations Committee are appointed by the Rector through a specific decree and are composed by a minimum of three to a maximum of five members among professors and assistant professors. At least one of the members must be full Professor or an associate Professor.

Having regard to Italian Law about "Equal Opportunities for Men and Women" and specifically to Art. 57 of the Leg. Decree n. 165, 30 March 2001, at least one third of the Examination Board must be women, except impossibility to be demonstrated when the Board proposal is made. In any case the gender balance must be respected: each gender must be represented at least by one third of components.

Having regard to Art. 35 bis of the Leg. Decree n. 165, 30 March 2001, Individuals condemned for crimes – even if not yet sentenced – in Book II of the Italian Penal Code ("crimes by civil servants against public administration") cannot be nominated as members of the Examining Board.

- 2. The Commission can carry out the preliminary meeting and the meeting relating to the evaluation of the candidates' qualifications electronically. Insofar as they are compatible, the rules of the University Regulations on the subject are guided (D.R.n. 467–2016 of 18/04/2016 modified with D.R. 318-2020 of 17/03/2020 and with D.R. n. 21 of 17/01/2022).
- 3. The Examinations Committee have 100 points for the evaluation of each candidate.

The results of the assessment of the qualifications will be published on the web site of the University <a href="https://www.univag.it/en/section.php?id=2163">https://www.univag.it/en/section.php?id=2163</a> and on the website of the Department.









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At the end of the sessions, the Examinations Committee draw up the list of the interviewed applicants with the obtained scores.

This list, signed by the President and by the secretary of the Examination Committee will be published on the web site of the Department at which the test was conducted, on the same day of the oral examination.

# ART. 6 Ranking

1. Once all the interviews have been completed the Examinations Committee draw up the final ranking list according to the sums of the obtained scores. In case of equality, the Ph.D. position will be conferred to the younger candidate.

The University Administration makes this list public by publishing it on the official notice board of the University <a href="https://www.univaq.it/section.php?id=1391">https://www.univaq.it/section.php?id=1391</a> and on the University web site <a href="https://www.univaq.it/en/section.php?id=2163&lang\_s=en">https://www.univaq.it/en/section.php?id=2163&lang\_s=en</a>), once the validity of the examination procedure has been checked.

The applicants will obtain a Ph.D. position according to their position on the ranking list. If the candidate obtains equal position in more than one Ph.D. course, he/she must choose one course.

# ART. 7 Enrolment in Ph.D. Courses

1. Successful candidates must submit their enrolment through the University of L'Aquila official website <a href="https://www.univaq.it/section.php?id=2163">https://www.univaq.it/section.php?id=2163</a> within 15 days from online publication of selection results. No information will be sent to the candidate's home. Candidates granted admission to the Courses are responsible for checking enrolment dates and procedures.

Failure to enroll by the deadline will be considered as drop out and the place will subsequently be assigned to the next candidate according to the ranking.

The enrolment forms, available on the University website, duly signed, must be delivered to the "Settore Dottorati, Assegni e Borse di Ricerca", within the deadline foreseen for the enrolment. The documents can be delivered in one of the following ways:

- by certified e-mail (PEC) addressed to protocollo@pec.univaq.it.

  The certified e-mail account used must be the candidate's personal account. The administration shall not accept documents from candidates using certified e-mail accounts belonging to other individuals or to institutions. The University Administration declines all responsibility for any non-deliveries or mis deliveries of the documents sent via PEC or in case the documents attached to it are non-readable or damaged. The date of submission will be indicated on the receipt sent automatically by the PEC system.
- by mail addressed to **concorso.dottorati@univaq.it**. All documentation must be attached in pdf format.

Candidates with a qualification obtained abroad, when they arrive in Italy, are required to deliver the originals of the documentation relating to the qualification to the Settore Dottorati, Assegni e Borse di Ricerca.









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The documents to submit compulsory are the followings:

- a) Enrolment form;
- b) Self-Declaration in substitution of certification and Self-Declaration in substitution of attested affidavit in accordance with articles 46 and 47 of the Presidential Decree 28th December, 2000, n.-445 (using the forms available on the University website <a href="https://www.univaq.it/section.php?id=684">https://www.univaq.it/section.php?id=684</a>);
- c) a copy of an identity document;
- d) a photocopy of the candidate's fiscal-code number;
- e) a photocopy of the candidate's "Italian-residency permit" (permesso di soggiorno) only for non-EU citizens;
- f) self-declaration to obtain the scholarship for the Ph.D. course they have earned admission to;
- g) Scholarship accreditation form.

Within 15 days from the start of the Ph.D. Course, candidates who have been conferred a scholarship must send by mail a photocopy of a receipt from the INPS (national social security service), certifying that they have been registered in "Posizione contributiva alla gestione separata" (for information visit the INPS website at <a href="https://www.inps.it">www.inps.it</a>).

#### Foreign citizens must declare possessing the following requisites:

- 1. that they benefit from civil rights and right to vote in their country;
- 2. that, aside from Italian citizenship, they possess all other requisites required for citizens of the Italian Republic.

# Applicants holding a university Degree awarded abroad must enclose, also, the following documents, translated and certified by competent Italian Diplomatic Authorities:

- copy of their university degree indicating their final mark;
- degree transcripts indicating the exams taken during their course and marks awarded.

Alternatively, the winner may present the certificate of comparability issued by CIMEA as part of the agreement stipulated with the University of L'Aquila (<a href="https://www.cimea.it/pagina-attestati-di-comparabilita-e-verification-of-qualifications">https://www.cimea.it/pagina-attestati-di-comparabilita-e-verification-of-qualifications</a>).

For the registration, please enter the service Diplo*me*, via the following link <a href="https://cimea.diplome.eu/univaq/#/auth/login">https://cimea.diplome.eu/univaq/#/auth/login</a>.

If the above documentation is not available at the time of enrolment, the candidate's enrolment shall be deemed "subject to verification". In this case all above mentioned compulsory documentation must be consigned by and no later than the 31st May 2023, failure to do so will result in expulsion from the course.

False declarations shall lead to the candidate's expulsion from the Ph.D. course and to prescribed sanctions for such offenses, vacant positions will be assigned to other candidates according to the ranking list.

2. Successful candidates who do not want to enroll in the course they have been selected for, must immediately send a signed letter of renouncement enclosing a photocopy (front-back) of their identity card.

If one winner does not accept the place, the Ph.D. Office will proceed down the ranked list and the following candidate, who has the right to be enrolled, will receive a communication to the e-mail address indicated on the application for participation in the competition. This e-mail has full notification value. Candidates selected as









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replacements must write a letter of acceptance within **two days** of the aforementioned e-mail. All **other necessary documents** indicated in this announcement must be consigned within, and no later than, **five days after receiving the notification**.

It will be possible to proceed down the ranking list until 2023, February 24<sup>th</sup>.

Failure to enroll by the deadline indicated is equivalent to tacit renunciation.

### ART. 8 Public Employee

Public employees admitted to Ph.D. course must ask the Administration to which they belong, to be placed on extraordinary leave for study purposes without paychecks for the duration of the course.

Public employees who does not obtain the aforementioned extraordinary leave without paychecks from the Administration to which they belong, will not be able to enroll or continue the PhD Course. Public employees who have already obtained the title of PhD, nor public employees who have been enrolled in PhD courses for at least one academic year, benefiting from this leave, are not entitled to extraordinary leave, with or without paychecks.

### ART. 9 Grants – Scholarships

1. The grants available indicated in the Ph.D. form are assigned according to the ranking list and verification of the suitability of the candidates referred to in art. 4.4.

A Ph.D. gross grant consists of  $\in$  16.243,00 which includes health and social security taxes that, on 2022, amounts to 35,030%, but only 11,677% is paid by the beneficiary.

From the fist year of each Ph.D. course, for each PhD student a research budget, not less than 10% of the total sum of the grant conferred, will also be available for research activity in Italy or abroad.

Grants are yearly provided and are renewed on the condition that the Ph.D. student has completed all programmed activities for the course during the previous year.

A Ph.D. scholarship cannot be cumulated with other grants except for those provided by national or foreign institutions which are aimed at integrating the Ph.D. student's research activity with periods abroad.

The payment of the scholarship is done by monthly installment.

Candidates who have already benefited from other Ph.D. study grants in Italy (even if only for one year) are not eligible to receive another grant.

If Ph.D. student does not respect what is indicated in article 15 paragraph 6 of Ph.D. regulations, his/her scholarship will be stopped.









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### ART. 10 Attendance Abroad

Ph.D. students can carry out training periods abroad in qualified institutions. Such training or study periods abroad cannot be longer than 12 months and can be allowed in case they are foreseen by:

- a. The study program of the Ph.D. course;
- b. Upon advice of the course coordinator or board;
- c. Upon request made by the Ph.D. student.

The period of study abroad can be extended until 18 months at maximum only for the PhD in co-tutelle with foreing bodies.

Ph.D. students are entitled to an increase in the scholarship up to a maximum of 50% for the aforementioned training periods abroad.

<u>Before going abroad</u>, the following documents must be sent to the above mentioned Ph.D. office by the Coordinator:

- signed authorization by the course Coordinator for training/study periods abroad of 6 months or less or
  - board resolution allowing a period of over 6 months.

<u>Upon returning to Italy of the Ph.D. student, the Ph.D. Coordinator shall present to Ph.D. Office the certification about study periods abroad.</u>

The financial coverage of the training periods abroad, for a maximum of 50% of the monthly scholarship, is entirely up to the Research program CN00000013 "National Centre for HPC, Big Data and Quantum Computing", under the PNRR – M4C2 – Investiment 1.4 – Advise "National Centers".

### ART. 11 Tuition Fees

All Ph.D. students are exempted from tuition payments. All Ph.D. students must only pay  $\in$  156,00; the Regional tax ( $\in$  140,00) and aduty stamp "marca da bollo" ( $\in$  16,00). Late payment will result in a  $\in$  52.00 fine.

# ART. 12 Rights and Duties

- 1. Ph.D. students are obliged to attend lessons and carry out all prescribed activities regularly in accordance with the programs and schedules set by the Board of Professors.
- 2. The University provides insurance coverage for the entire duration of the Ph.D. course and for activities pertaining to the course.
- 3. Compatible employment activities shall be allowed for brief periods, following authorization from the Board of Professors, after hearing the favorable opinion of the supervisor, as long as such commitments do not pose any sort of conflict with the activities required within the Ph.D. course.
- 4. Interruptions in attendance shall be allowed for:









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- Illness or injury for periods of 30 days or more;
- Military or civil service;
- Training courses for teacher certification.

Interruption may also be agreed for substantiated serious personal reasons after having received a positive opinion of the Board of Professors. Discontinuation does cannot be longer than six months one year according to the total course length Ph.D. students benefitting of interruption period must recover the entire time with consequent test delay for the move to following year and for the awarding of title.

- 5. Maternity/paternity leave and leave for adoption or foster care may also be authorized. Maternity-leave laws and regulations as indicated in Gazzetta Ufficiale n. 247 of 23<sup>rd</sup> October, 2007 shall be applied.
- 6. A Ph.D. student's unexcused absence or non-fulfillment of obligations shall result in his/her exclusion from the course by the Board of Professors. In this case the expelled Ph.D. student shall be liable for the sum of the scholarship conferred or for tuition fees.
- 7. Ph.D. students enrolled at the University of L'Aquila may carry out limited teaching or tutoring activities within the University's Bachelor and Master-level degree courses if so established and programmed by the Board of Professors in agreement with the University Department.
- 8. Ph.D. students must preserve the confidentiality in information, knowings and materials. They must not disclose beyond subject different by the ones that gave to them.

# ART. 13 Graduation

Students can write their Ph.D. thesis in Italian or in English, an abstract in English must also be provided. Students wishing to write their thesis in a language different form Italian or English must receive authorization from the Board of Professors.

The evaluation committee for Ph.D. thesis discussion will be appointed according to the Ph.D. Regulations of the University.

A Doctoral Degree title (Dott. Ric. or Ph.D.) will be awarded following a positive assessment of the Ph.D. thesis, taking into account the achieved results.

# ART. 14 Head of the Competition Procedure

According to art. 5 of law 07/08/1990, n. 241, the Head of the Settore Dottorati, Assegni e Borse di ricerca of the University of L'Aquila (Piazza Santa Margherita, 2 – Palazzo Camponeschi - L'Aquila) shall be responsible for the competition procedure.









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### ART. 15 Legal Reference

For all other matters not foreseen or included in this announcement we shall refer to Law n. 210 of 03/07/98, Law n. 240 of 30/12/2010, Ministerial Decree 226/2021 and to the "Regolamento dei corsi di Dottorato di Ricerca" (Ph.D. regulations) of this University.

This announcement is available at: <a href="https://www.univaq.it/en/section.php?id=2163&lang-s=en">https://www.univaq.it/en/section.php?id=2163&lang-s=en</a>

Further information may be requested through HELP POINT ONLINE, accessible from the website <a href="https://servicedesk-form-app-eu-qta.azurewebsites.net/">https://servicedesk-form-app-eu-qta.azurewebsites.net/</a>

L'Aquila 21/12/2022

The Rector of the University of L'Aquila Signed Prof. Edoardo Alesse







Ph.D. Course in INFORMATION AND COMMUNICATION TECHNOLOGIES				
Ordinary places full grant	1			
Start of activity	1 <sup>st</sup> March 2023			
Grant/Fellowship Funding source	• 1 grant financed by the research program CN00000013 National Center "National Centre for HPC, Big Data and Quantum Computing", in the framework of PNRR – M4C2 – Investment 1.4 - Advise "National Centers" (D.D. n. 1031 del 17/06/2022)			
Grants subject	Development of data science approaches and services for the study of complex phenomena associated with natural and environmental disasters.			
Description of the research	The research will concern the definition of data science approaches (recovery, preparation and analysis of (Big) data) that guarantee fairness, explainability and privacy, for the study of complex phenomena associated with natural and environmental disasters. The modeling of these phenomena may have to consider, where possible, the behavior of the people involved in the phenomena themselves and evaluate alternative strategies defined to reduce the risks of an environmental and natural disaster. The approaches will have to support the development of complex applications and the implementation of HPC and Big Data frameworks, tools and systems.  The student will have to collaborate with a multidisciplinary research group that intends to support society in defining disaster risk reduction policies, offering their computer science and technological skills in modeling natural and man-made disasters as well as in predicting their effects on the entire ecosystem. The research project will be carried out within the Research Programme ricerca CN00000013 "National Centre for HPC, Big Data and Quantum Computing", financed by the research program CN00000013 National Center "National Centre for HPC, Big Data and Quantum Computing", in the framework of PNRR – M4C2 – Investment 1.4 - Advise "National Centers" (D.D. n. 1031 del 17/06/2022).			
Project Manager	Antinisca Di Marco			
Duration	3 years			
Curricula	a) System Engineering, Telecommunications and HW/SW platforms b) Emerging computing models: algorithms, software architectures and intelligent systems			
University Department Responsible for the Ph.D. Course	Department of Information and communication technologies			
Ph.D. Course Website	http://phdict.disim.univaq.it/			
Ph.D. Course Coordinator	Prof. Vittorio Cortellessa vittorio.cortellessa@univaq.it			
Admission Pre-requisites	All Master-level Degrees or foreign degrees with certified equivalency or recognized as equivalent to the aforementioned qualifications. Within the deadline indicated in this call for applications, candidates who are expected to obtain the above mentioned Degrees by no later than the enrollment may also apply.			
Admission Procedure	Qualification assessment and Oral exam.  The electronically oral exams will be held by using web teleconferencing (e.g. Microsoft Teams, Skype). For this purpose, each candidate has to enter his/her own electronic contact while filling in the application format.  The testing commission will certify the identity of the candidate, to this end the candidate shall be required to show a valid identification document with recent photo, during the oral exam. Foreign applicants may sit the oral exam in English.			
Examination topics	The oral exam will focus on the following aspects: candidates' qualifications and his knowledge ICT basic topics, especially the topics characterizing the curricula, personal motivation, scientific interests and attitude to research activity.			







How to apply	The application must be submitted only via the online procedure available at: <a href="https://pica.cineca.it/univaq/centronazionaledott38">https://pica.cineca.it/univaq/centronazionaledott38</a> .  The documents must be attached in pdf format.  The application and the attached documents are submitted automatically by closing the online procedure. So, no hard copy of the application and of the documents must be sent to the office.	
Documents to be annexed to the Application	<ol> <li>CV</li> <li>Candidates holding a degree from an Italian university must provide:         <ul> <li>Self-certification concerning their Bachelor-level Degree indicating final mark and list of exams taken and marks obtained;</li> <li>Self-certification concerning their Master-level Degree course indicating final mark and list of exams taken and marks obtained.</li> </ul> </li> <li>Candidates enrolled in an Italian Degree Course must include:         <ul> <li>Self-certification of their Bachelor-level Degree indicating final mark and list of exams taken and marks obtained;</li> <li>Self-certification of the exams so far taken in their Master-level Degree course indicating marks obtained.</li> </ul> </li> <li>Applicants with foreign Degrees and those who still have to award the Degree, must follow the directions explained in article n. 2 of this call.</li> <li>Each candidate must enter the name and the e-mail address of one or two referee.         <ul> <li>The referee will be automatically advised by the system and he/she must compile the reference letter following the received instructions.</li> </ul> </li> <li>Summary, max. 2 pages (font size minimum 10), of the candidate's Degree thesis.</li> <li>Summary, max 2 pages (font size minimum 10), of the candidate research project that he/she wants to develop during the Ph.D. Course</li> <li>A complete list and a copy of the candidate's publications deemed useful for the assessment.</li> <li>Any additional qualifications deemed useful for the assessment.</li> </ol>	
Language(s)	Assessment of foreign language skills English language skills and competence shall be assessed during the oral exam.  Admission The candidate may sit exams in ITALIAN or ENGLISH	
Exam Schedule	Qualification assessment: 10 a.m. of 2023, January 30 <sup>th</sup> Oral exam: 10 a.m. of 2023, February 3 <sup>rd</sup> , electronically.	
Assessment Criteria	<ol> <li>The examination procedure consists in two phases: qualification assessment and oral exam. Final score shall be indicated out of a total of 100 points attributed as follows:         <ol> <li>Qualification assessment: Max. 50 points attributed through the evaluation of CV, presentation letters, publications and additional qualifications. Minimum score is 30/100.</li> </ol> </li> <li>Oral exam: max. 50 points. During the oral exam, each candidate has to present and defense the thesis and the research project.         <ol> <li>The oral exam aims to assess the applicant's motivation and aptitude for scientific research, his/her experience within the research sector and general knowledge of topics and issues pertinent to the Ph.D. course curriculum chosen by the candidate. The oral exam will also include assessment of the candidate's English language skills in the scientific field.</li> </ol> </li></ol>	
Title evaluation results publication	Title evaluation results shall be published on the University website <a href="https://www.univaq.it/section.php?id=2163">https://www.univaq.it/section.php?id=2163</a> and on Department website: <a href="http://www.disim.univaq.it">http://www.disim.univaq.it</a> .	







Ph.D. Course in MATHEMATICS AND MODELING				
Ordinary places	1			
Start of activity	1 <sup>st</sup> march 2023			
Grant/Fellowship Funding source	1 grant financed by the research program CN00000013 National Center "National Centre for HPC, Big Data and Quantum Computing", in the framework of PNRR – M4C2 – Investment 1.4 - Advise "National Centers" (D.D. n. 1031 del 17/06/2022)			
Grants subject	High performance computing tools and mathematical modeling of natural disasters			
Description of the research	Our territory is subject to multiple types of risk: frequent natural disasters with local impact, such as landslides, floods and lava flows; natural disasters with a high regional impact such as volcanic eruptions, earthquakes, fires; natural hazards on time scales that cannot be precisely quantified, such as tsunamis.  Therefore, a multi-hazard territorial strategy and an emergency planning is essential. The main challenge is to manage the multiple interacting factors that generate disasters. The overall behavior of a system cannot simply be deduced from the response of a single phenomenon, but must be derived from the study of the relationships between interacting events (multi-hazard assessment) as typical of complex dynamic systems. Models of this type require enormous computational resources.  In order to adequately develop his line of research in the context described above, the PhD student will have to complete his training in the context of high-performance computing by mastering most of the aspects listed below:  Design and implementation of high performance parallel systems equipped with heterogeneous architectures based on multicore microprocessors and calculation accelerators;  Design of black-box applications and algorithms for exploratory and predictive analysis;  Design and optimization of high-performance scientific applications using advanced parallel and distributed programming techniques;  Design of algorithms and applications for quantum systems;  Design of algorithms and applications for quantum systems;  Differential or discrete modeling and other advanced mathematical procedures to arrive at the solution of numerical problems;  Analysis and interpretation of complex phenomena through advanced statistics, machine learning and deep learning tools.			
Project Manager	Prof. Bruno Rubino			
Duration	3 years			
Curricula	///			
University Department Responsible for the Ph.D. Course	Department of Engineering, Computer Science and Mathematics			
Ph.D. Course Website	http://people.disim.univaq.it/~dottorato_mate_mode/			
Ph.D. Course Coordinator	Prof. Davide GABRIELLI			
Admission Pre-requisites	All Master-level Degrees or foreign degrees with certified equivalency or recognized as equivalent to the aforementioned qualifications.  Within the deadline indicated in this call for applications, candidates who are expected to obtain the above mentioned Degrees by no later than the enrollment, and before the Ph.D. programme's start date may also apply.			
Admission Procedure	Qualification evaluation and oral exam.  Foreign applicants can take the oral exam in English.  Applicants may take the oral exam via web. In this case the candidate must specify the modality they want to use for their interview indicating a valid contact address. This request must be authorized by the testing commission once the identity of the candidate has been certified, to this end the candidate shall be required to show a valid identification document at the moment of the interview.			
Examination topics	Presentation of the thesis, research activity and research project.			
How to apply	The application must be submitted only via the online procedure available at: <a href="https://pica.cineca.it/univaq/centronazionaledott38">https://pica.cineca.it/univaq/centronazionaledott38</a> .  The documents must be attached in pdf format.			







	The application and the attached documents are submitted automatically by closing		
	the online procedure. So, no hard copy of the application and of the documents must		
	be sent to the office.		
	<ol> <li>CV</li> <li>Candidates holding a degree from an Italian university must provide:         <ul> <li>Self-certification concerning their Bachelor-level Degree indicating final mark and list of exams taken and marks obtained;</li> </ul> </li> </ol>		
	<ul> <li>Self-certification concerning their Master-level Degree course indicating final mark and list of exams taken and marks obtained.</li> <li>Candidates enrolled in an Italian Degree Course must include:</li> </ul>		
Documents to be annexed to the	Self-certification of their Bachelor-level Degree indicating final mark and list of exams taken and marks obtained;		
Application	<ul> <li>Self-certification of the exams so far taken in their Master-level Degree course indicating marks obtained.</li> </ul>		
	<ol> <li>Applicants with foreign Degrees must follow the directions explained in article n. 2 of this call.</li> </ol>		
	5. The candidate must indicate the name of two professors with their e-mail address. The referee will receive an e-mail with the instruction to write the recommendation letter directly on line.		
	6. Summary, max. 2 pages, of the candidate's Degree thesis.		
	7. Research project related to the topic of the scholarship.		
	<ol> <li>Any publications and additional qualifications deemed appropriate for assessment.</li> </ol>		
	Assessment of foreign language skills		
	English language skills and competence shall be assessed during the oral exam.		
Language(s)	.,		
	Admission The candidate may sit exams in ENGLISH.		
	Qualification assessment: 10 a.m. of 2023, January 27th		
	Qualification assessment. 10 a.m. of 2023, January 27th		
Exam schedule			
	Oral Exam: 12.15 p.m. of 2023, February 1st, at Department of Engineering, Computer Science and Mathematics, Via Vetoio – Coppito – L'Aquila.		
	The examination procedure consists in two phases: qualification assessment and an oral exam. The candidate's scores will be indicated out of a total of 100 points attributed as follows:		
Assessment Criteria	1. <b>Qualification assessment:</b> Assessment of the candidate's CV, letters of recommendation, publications and other qualifications. The minimum score required for admission to sit the oral exam is 30, the maximum score is 50 points.		
	2. <b>Oral exam:</b> The oral exam consists in the candidate's presentation of his/her Degree thesis and research activity. The aim is to evaluate the candidate's aptitude and motivation for research. The test also includes assessment of the candidate's English language skills. The foreign candidates may sit the oral exam in English. The minimum score needed to pass is 30 over a max of 50 points for the oral exam.		
Title evaluation results publication	Title evaluation results shall be published on the University website		
	https://www.univaq.it/section.php?id=2163 and on Department website: http://people.disim.univaq.it/~dottorato mate mode/		







# Technical guidelines for the submission of the application form for Ph.D. Courses XXXVIII cycle

# Online application open from 23<sup>rd</sup> December 2022 at 11 a.m. until 24<sup>th</sup> January 2023 at 1.00 p.m. CEST

Online form available at: https://pica.cineca.it/univag/centronazionaledott38

- 1. The application form must only be submitted online. No hard copy of the application must be sent by post.
- 2. Before filling in the application form, please read carefully the selection announcement, in particular the chosen PhD course table in order to verify the eligibility criteria and the documents to be submitted.
- 3. WATCH OUT: ALL DOCUMENTS MUST BE UPLOADED IN PDF FORMAT AND, IN SOME CASES, THEY MUST BE PRINTED, SIGNED AND UPLOADED. WE ADVISE APPLICANTS TO USE A PC CONNECTED WITH A PRINTER AND A SCANNER.
- 4. It is possible to fill in the application form by logging in at different times and saving the data. In order to access the application form that has been partly completed you must click on Modify to complete it.
- 5. Further information may be requested through HELP POINT ONLINE, accessible from the website <a href="https://servicedesk-form-app-eu-qta.azurewebsites.net/">https://servicedesk-form-app-eu-qta.azurewebsites.net/</a>
- 6. For technical problems contact support via the link at the bottom of the page <a href="https://pica.cineca.it/univaq">https://pica.cineca.it/univaq</a>.
- 7. Applicants who want to apply for more than one Ph.D. course must submit as many applications as the chosen courses.
- 8. Applicants with foreign qualifications that have not been legally recognized as equivalent to Italian degrees must read art. 2 of the selection announcement and upload the required documents in the relevant section of the online application.
- 9. After the application has been correctly filled in and submitted, applicants will receive an email with the confirmation of the submission.

#### 1. DATA REGISTRATION

To start the registration go to the website <a href="https://pica.cineca.it/univaq/centronazionaledott38">https://pica.cineca.it/univaq/centronazionaledott38</a>
Access can be done via SPID. In the absence of SPID, at the first access applicants need to register by clicking on 'Register' and fill in the required data. If applicants already have LOGINMIUR credentials, they don't need to register again. They must access with their LOGINMIUR username and password in the relevant field LOGINMIUR.

In case you forgot username and password, click on 'Forgot your credentials?'.

After completing the data, click on 'New Registration'. Applicants will receive an email with the data to confirm their registration. In case you don't receive or cannot read the email, contact support via the link at the bottom of the page <a href="https://pica.cineca.it/univaq">https://pica.cineca.it/univaq</a>.







#### 2. APPLICATION FORM ACCESS

Once registered it is possible to access the website <a href="https://pica.cineca.it/univag/centronazionaledott38">https://pica.cineca.it/univag/centronazionaledott38</a>

and login with username and password to fill in the application form by clicking on 'New Submission'. Before filling in the application form, applicants can modify their personal data by clicking on the top right button (User Profile) and select what to modify.

The first section to be filled in is "PHD COURSE": the applicant must select the Ph.D. course, one of the curricula and declare the position.

Candidates must to express a preference for themed scholarships, by opening the appropriate menu.

**WATCH OUT:** after completing each section of the form, the applicant must click on the button "SAVE AND PROCEED". Only if the data have been correctly filled in, the applicant can go to the next section. Otherwise error messages will display and will be compulsory to correct the data.

The section named "DECLARATIONS" display a list of declarations concerning the veracity of data inserted and the treatment of the personal data inserted in the application form.

The third section to be filled is "PERSONAL DATA". This section is partially filled by transferring data from the registration procedure thus the candidate must complete the missing items. In case of mistakes in personal data, applicants can modify them by clicking on the top right button (User Profile).

In the following section "Admission requirements" applicants must select one out of the four options proposed. After that applicants must specify the qualification awarded or to be awarded by the completion date of the enrollment, and in any case no later than the start date of the course (1st March 2023).

In the following section "FURTHER DECLARATIONS" the applicants must compulsory declare the level of knowledge of English language and if they are in situations preventing the receiving of the scholarship and/or of special needs.

In the section named "ATTACHMENTS" the applicant can upload the identity card (or passport) and all the qualifications and certifications required in order to participate to the selection of the chosen Ph.D. course. The applicant can write a self-declaration about the degree obtained and about all the exams passed. The self-declaration concerning the degrees obtained, can be written in a simple paper according to the scheme available below, or downloading the concerned form if it is available on the website of the home University. The applicant must read carefully the list of documents required for the Ph.D. course chosen, in order to speed up the procedure.

ATTENTION: in this section you must upload the documents requested for the recognition of the foreign academic degree (art. 2 of the selection announcement - Admission of applicants with foreign (non-Italian) qualifications).

The files must be in pdf format and readable. For each file a brief description is needed.

After completing this section applicants will be redirected to the dashboard where they can see the draft of their application form. By pressing the bottom "Sign and submit" the process is finalised. If the application has been filled in correctly the system displays the PDF file of the application. In case of mistakes applicants receive an error message and the application must be corrected. Once all the mistakes are corrected the applicant can go to the next section for the submission. By clicking on "Sign" bottom the process is finalise and the PDF file of application is generated.

The application must be signed, missing the signature the application will be rejected.







There are 3 methodologies to sign it and the candidate must select one of them and read carefully they directions.

According to article 3 of the call the possible methodologies are the following:

- By digital signature using smart card, USB token or remote signature which allow the owner to sign general documents by means of a signature software or a Remote Signature web portal made available by the Auditor. Those who have a Digital Signature smart card or USB token shall verify that they are compatible with the Digital Signature system integrated in the system server. If so, the owner may sign the application directly in the system server (e.g. ConFirma);
- Those who do not have compatible digital signature devices and the Remote Digital Signature Owners who may access a web portal for signing general documents shall save in their own PC the .pdf file generated by the system and, without modifying it, digitally sign it in CAdES format. A .p7m file will be generated, which shall be saved and uploaded again in the system. Any editing to the file before signing with the Digital Signature shall interfere with the automatic check of correspondence between the content of such a document and the original, and this will bring to the application exclusion;
- If none of the above-mentioned options can be used candidates shall save in their own PC the .pdf file generated by the system and, without modifying it, print and sign it with full original signature in the last page of the printed document. A scanned .pdf copy of such a document shall be produced and the file thus obtained shall be uploaded to the system.

In case the access to the platform is via SPID, it is not necessary to sign the application with one of the aforementioned methods.

In case the applicant decides to sign the PDF file he/she must verify that the file that is going to be upload is complete because the system accept only one PDF file.

After the submission applicants will receive an email with the confirmation of the submission. Applicants will always be able to login to their account, personal data and application form.

#### 3. REFERENCE LETTERS

The applicant can indicate the names and addresses at least two referees. The applicant must write in the form the official email address of the referee. A private email address is not allowed.

The referee will be informed of the candidates requirement and receive a reference letter form that he/she must submit by January 26<sup>th</sup>, 2023 at 5 o'clock p.m. CEST.

We advise applicants to inform referees that they will receive the request. When the referee fills in the letter and submits it, the applicant will receive an email specifying that the letter has been upload. Applicants, however, can always check the status of the request. Reference letters uploaded by applicants or sent by the referent directly to the university, will not be taken into consideration.

If applicants wish to change the referee they must contact support via the link at the bottom of the page <a href="https://pica.cineca.it/univaq">https://pica.cineca.it/univaq</a>.







#### 4. APPLICATION FORM MODIFICATION OR WITHDRAWAL

Modifications of the application form after the pdf has been created are possible:

- If they have submitted the application form and received the email of confirmation applicants cannot modify the application form but they will be able to withdraw it following the relevant procedure available on the dashboard and submit a new application form.
- If they have created the pdf file but they have not completed the submission (the pdf file has not been uploaded yet and so they haven't received the email of confirmation) then they must contact support via the link at the bottom of the page <a href="https://pica.cineca.it/univaq">https://pica.cineca.it/univaq</a> and ask to have the application re-opened. In the email they must specify the reason of their request, the ID of their application form and attach copy of their identity document.







# Self-Declaration in substitution of certification (art. 46 D.P.R – 28<sup>th</sup> December 2000, n.445)

and/or

# Self-Declaration in substitution of attested affidavit (art. 47 D.P.R 28th December, 2000 n.445)

The undersignedbirth)	born in (place of birth)		on (date of
residing in (city/State/Country) at (address)			Postal code
	<b>DECLARES:</b>		
1) in compliance to art(s). 46,47 and 3 following Degree:	8, D.P.R 28/12/200	00, n.445 that he/she ha	s been conferred the
Bachelor-level Degree in (title) Degree)	on (date issue	at (name of University of d)	r College issuing the , mark
and that he/she passed the following exams:			
	MARK	DATE -	
		- - -	
2) in compliance to art(s). 46,47 and 38, Degree:	D.P.R 28/12/2000,	n.445 that he/she will be	confer the following
Master-level Degree in (title) Degree)	at on (date issue	(name of University or C	College issuing the
and that he/she passed at today the following	exams:		
EXAM (title of the exam/course)	MARK 	DATE -	
		- - -	







The undersigned declares that he/she is aware of the sanctions applied in case of false statements established in art.76 D.P.R. 28/12/2014, n.445 and of the consequent loss of any benefits obtained by making false statements as established in art. 75 D.P.R. 28/12/2014, n.445.

The undersigned, under penalty of nullity of the application	on, shall enclose a photocopy of a valid ID.
Date,	
-	(Applicant's signature)