



PROT. N. 0056156 del 10.06.2024

**NOTICE OF PUBLIC COMPETITION FOR ADMISSION TO PHD
PROGRAMMES – 40TH CYCLE
ACADEMIC YEAR 2024/2025
PNRR FINANCING
DM 629/2024
DM 630/2024**

Art. 1 – ESTABLISHMENT AND ACTIVATION OF PHD PROGRAMMES

- 1.1 The public selection process for admission to the XL doctorate cycle is announced for the assignment of n. 1 research doctorate scholarship under the PNRR Mission 4, Component 1, investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage" pursuant to Ministerial Decree 629/2024 and n. 10 PhD scholarships under the PNRR Mission 4, Component 2, Investment 3.3 "Introduction of innovative doctorates that respond to the innovation needs of companies and promote the hiring of researchers by companies"

DOTTORATO	DM 629	TEMATICA
LAW AND HUMANITIES	1	PUBLIC ADMINISTRATION
DOTTORATO	DM 630	TEMATICA
COMPUTER SCIENCE AND MATHEMATICS OF COMPUTATION	2	BUSINESS INNOVATION
METHODS AND MODELS FOR ECONOMIC DECISIONS	2	
CHEMICAL AND ENVIRONMENTAL SCIENCES	6	

- 1.2 Any changes, updates or additions regarding the scholarships in this notice will be published by special order exclusively on the University website <https://www.uninsubria.it/la-didattica/dottorati-di-ricerca>

Art. 2 – REQUIREMENTS FOR ADMISSION TO THE COMPETITION

- 2.1 Applicants may apply to the competition for admission to the PhD programme, with no age or nationality restrictions, if they hold a specialised or Master's degree or a degree awarded according to the regulations in force prior to Ministerial Decree 509/1999, awarded in Italy or an equivalent academic qualification from a foreign university.
- 2.2 The application may also be submitted, *sub condicione*, by graduating students, provided that they notify by **31 October 2024** by email to scuola.dottorato@uninsubria.it, sending a declaration in lieu of certification, the date on which they obtained the required qualification, under penalty of forfeiting their admission to the competition.



- 2.3 The assessment of the suitability of foreign degrees is the responsibility of the Selection Board of each PhD programme in compliance with the relevant legislation in force in Italy and in the country where the degree was awarded and with international treaties or agreements on the recognition of degrees for the pursuit of studies.
- 2.4 All candidates are admitted to the competition procedure with reservations.
The Administration may order exclusion for failure to meet the prescribed requirements at any time, by means of a reasoned decision.

Art. 3 – APPLICATION

- 3.1 The application to the competition may be submitted up to 12 noon (local time) on the 30th day from the date of publication on the University Register by connecting to the Università degli Studi dell'Insubria website (www.uninsubria.it) from any personal computer. After the above deadline, the link will be deactivated and it will no longer be possible to complete the application and register for the admission test.
- 3.2 The fee for admission to the competition is set at € 30.00 (thirty/00) and must be paid in a single instalment using the payment notice attached to the online application by the closing date of the competition notice, under penalty of exclusion from the selection.
- 3.3 Applicants may apply for more than one PhD programme. For each course in which they wish to participate, applicants must fill in a specific application form and submit the documents requested in the specific Programme Sheet and pay the respective non-refundable application fee of € 30.00.
The documentation may be produced in Italian or English; the translation will be the responsibility of the candidate. The required documentation must be attached according to the facsimiles available and indicated in the Programme Sheets.
- 3.4 The procedure for submitting the application, which is also available in the “Competition Registration Guide” on the webpage of the XL Cycle Doctoral Competition, is as follows:
Access from the website www.uninsubria.it, the “Servizi Web – Segreterie Studenti” (<https://uninsubria.esse3.cineca.it/Home.do>) under Registration;
then proceed to log in, choose “*admission test*” and follow the instructions.
Those who already have a userID and password can access the web services by logging in, choosing “*admission test*” and following the instructions (GUIDE: https://archivio.uninsubria.it/sites/default/files/Doc_Segreterie_Studenti/Guide_on_line/Guida%20online%20Registrazione.pdf)
To fill in the application form:
- select PhD programme
 - enter your personal data, educational qualification data; details of a valid identity document; the same document must be attached as a scanned file;
 - select your foreign language from among those listed in the Programme Sheet of each PhD programme, knowledge of which will be verified during the oral test;
 - indicate whether you are interested in paid university accommodation, i.e. the allocation of beds at the University Colleges in Varese or Como reserved annually for each PhD programme. The recipients of accommodation among those who have applied for it will be identified by the Board of teachers of each PhD programme following enrolment;

- enter the name and email address of the contact person(s) identified if the Programme Sheet include letters of reference among the qualifications assessed for admission. By automated procedure the referees receive information on how to send the letters of reference, which must be entered by the deadline;
- upload the titles; the research project as listed in the Programme Sheet of each PhD programme;
- attach the list of titles submitted;
- make payment of non-refundable € 30.00 by the deadline via Pago PA (payment notice available at the end of the procedure);

EU and non-EU citizens resident abroad with a qualification obtained abroad follow the same instructions for registration for the competition and must enclose the following documents in the procedure:

- **entry visa to Italy, if already available**, to take the in-person admission tests (check here whether a visa is required: <https://vistoperitalia.esteri.it/home/it>);
- **original qualification, or certified copy** or replacement certificate valid for all legal purposes, translated and accompanied by declaration of value by the Italian representation in the country of origin; or, alternatively, CIMEA verification certificate.

Titles and documents must be attached in electronic PDF format not exceeding 5 MB each. The file name must include the candidate's surname and the type of title but must not exceed 25 characters (e.g. rossi_curriculumvitae).

3.5 Until the deadline for admissions stated in the notice, candidates may:

- add, delete or edit the attached documents (titles and identity document) via the "insert/edit assessable titles" button;
- adding, deleting or modifying the name and email address of the contact persons indicated, if the reference letters are included among the qualifications assessed for participation in the chosen competition (Annex), as well as requesting that the contact persons already included send the letter.

Changes will only be saved permanently by the system if the application is completed again.

Only the specific qualifications required for each PhD programme as set out in the Programme Sheets will be assessed by the selection board.

Titles delivered otherwise than in accordance with this notice will not be evaluated by the Selection Committee.

Failure to complete the application in the manner described above will result in ineligibility for the competition test.

No additions to the documentation will be accepted after the deadline.

3.6 In order to guarantee equal opportunities in the performance of the tests, candidates with a disability or impairment within the meaning of Law 104/1192 or with specific learning disorders within the meaning of Law 170/20210, must send a specific email notification by submitting the appropriate application and attaching the appropriate certificate from the competent public health structure, within the deadline for submitting applications to disabilita@uninsubria.it and to scuola.dottorato@uninsubria.it.

The additional time and compensatory and/or dispensatory measures, depending on the type of test and the candidate's specific condition, will be defined by the Disability Office

and will be communicated to the Selection Board through the Teaching Coordination Office.

Applicants with disabilities, disabilities within the meaning of Law no. 104/1992, or with DSA, resident in foreign countries, who wish to take advantage of the above-mentioned measures, must present legalised certification, where required by current international standards, attesting to their disability, disability or DSA status, issued in their country of residence, accompanied by a sworn translation by an official translator or certified as conforming to the original text by the Italian diplomatic representations, in Italian or English. The Disability Office ascertains that the foreign documentation certifies a condition of invalidity, disability or specific learning disorder recognised by Italian law. Pending verification of the authenticity of the aforementioned documentation by the University bodies, candidates residing in a non-EU country are admitted to the test under probationary status.

- 3.7 At the end of the application deadline and after appropriate checks on the completeness of the application and attached documents with respect to what is required in the Programme Sheets, the list of admitted candidates will be published at <https://www.uninsubria.it/la-didattica/dottorati-di-ricerca>.
- 3.8 By submitting an application for admission to the selection, the candidate indicates his or her acceptance of all the rules contained in this call for applications. Candidates are advised not to wait until the last few days before the closing date of the call to apply; the University accepts no responsibility for any malfunctions due to overloading of the networks or application systems.

Art. 4 – ADMISSION TESTS, EVALUATION AND SELECTION OF CANDIDATES

- 4.1 Admission to PhD programme (PNRR program) is based on a public selection procedure based on qualifications and examinations, which guarantees the comparative assessment of the candidates, carried out by Selection Boards formed and appointed in accordance with the regulations in force. The selection, which is carried out by means of an oral and/or written test, ascertains the candidates' preparation and aptitude for scientific research and personal motivation, and the evaluation of their qualifications.
- 4.2 4.2 The Commission shall verify the completeness and consistency of the qualifications indicated in the curriculum vitae with respect to the application specified in the forms and shall award points according to the criteria indicated in the Programme Sheet. Candidates are not required to be present during the assessment of the qualifications.
- 4.3 The PhD admission test may be taken in English, provided that the candidate expressly requests it in the application form. The oral test may include a test of knowledge of the foreign language indicated in the Programme Sheet. The test is held according to the timetable indicated in the Programme Sheet and updated on the University's PhD programme web page. The test may be written or oral or composed of both methods as indicated in the specific Programme Sheet.
- The test is held **in person** and candidates must appear at the admission tests, under penalty of exclusion, with the same valid identification document used to submit the application.

A **remote** test may be requested, which must be authorised by the Selection Board, which will also set the timetable. The distance test must be conducted using the platform provided by the University (Microsoft Teams); to this end, the candidate must indicate an email account that the selection board will use for the video call.

The candidate must be available at the personal address, communicated in advance, on the day indicated, in accordance with the established timetable. For identification purposes and under penalty of exclusion from the competition, the candidate must show the valid identity document used to submit the application.

Any candidate who fails to be present at the remote meeting will automatically be deemed a "no-show".

The candidate may be excluded from the competition if the personal address (account) has not been indicated, if the connection is missing, if he/she fails the connection test, if he/she cannot be found on the appointed day or time or if he/she fails to produce a valid identity document. The University of Insubria declines all responsibility in the event that technical reasons prevent the regular execution of the interview.

- 4.4 The assessment of qualifications will be added to the marks for the oral/written test. The competition is deemed to have been passed if a minimum mark indicated in the specific Programme Sheet is achieved in the tests specified in the notice.

Art. 5 – SELECTION BOARD

- 5.1 The Selection Board in charge of the comparative evaluation of the candidates is appointed by Rectoral Decree for each Doctoral Course according to the provisions set out in the University Doctoral Course Regulations.
The Boards appoint the President and Secretary from among their members.
- 5.2 At the end of the assessments, the Selection Board draws up an overall merit list on the basis of the marks obtained by the candidates in the tests.

Art. 6 – FINAL RANKINGS

- 6.1 The final rankings, approved by Rectoral Decree, will be posted on the University's Official Bulletin Board and on the PhD page <https://www.uninsubria.it/la-didattica/dottorati-di-ricerca>. Publication replaces for all purposes any personal communication.
The deadline for any appeals starts from the date of publication of the aforementioned decree.
Candidates are admitted to the courses according to the order of the ranking list up to the number of places available for each PhD programme.
Candidates are required to consult the rank list, any changes in the same and the deadlines for enrolment, in the notices published on the website.
- 6.2 If the PhD programme is organised in curricula, the Commission may prepare separate rankings. Candidates shall be admitted to each curriculum up to the number of places offered for that curriculum. In the event that fewer candidates are admitted to a curriculum than the number of places with scholarships advertised, the remaining scholarships may be awarded to candidates competing on other curricula, in descending order of their respective rankings.

- 6.3 If grants financed by public or private bodies are available, candidates in the examination express their interest in competing for one or more positions in addition to the places made available by the University.

The Selection Board will prepare an overall general ranking list and specific merit rankings for each funded project with the evaluations of the candidates who expressed interest in that project.

In the event of successful placement in more than one ranking list, the candidate must exercise the option for only one PhD programme and/or project and/or funding.

Art. 7 – ENROLMENT AND ATTENDANCE FEES

- 7.1 The deadline for registrations is **31 October 2024**. Further and subsequent deadlines are required in the event of the rankings being short-listed following the withdrawal of successful candidates. Enrolment is carried out according to the procedures described on the University's website at

<https://www.uninsubria.it/formazione/offerta-formativa/dottorati/immatricolazioni>

Failure to enrol by the deadline will be considered a renouncement of the place (with or without scholarship), which will be assigned to the candidate who follows in the ranking, according to the order of that ranking.

Eligible candidates will be contacted by email at the email address indicated in the competition registration procedure.

Eligible candidates, who will have received the communication by email, must proceed to enrolment within the deadline indicated in the aforementioned communication, under penalty of forfeiting this right.

Successful candidates are admitted to the course with reservations and may be excluded from the course if they do not meet the requirements.

If verifications of the documentation submitted reveal false or misleading declarations, without prejudice to the sanctions provided for by the penal code and the special laws on the subject (Articles 75 and 76 of Presidential Decree 445/2000), the candidate will automatically forfeit his or her enrolment. The university administration will provide for the recovery of any benefits granted (such as scholarships, reduction in student contributions) and will not proceed with any reimbursement of fees paid. Lastly, a false declaration will result in exposure to action for damages by the parties concerned.

- 7.2 Successful candidates who are non-EU citizens resident abroad with a qualification obtained abroad must register, by the deadline indicated in the notice regarding the rankings, in University (<https://www.universitaly.it/formazione-stranieri>) (in order to obtain validation from the University and proceed with the application for a study visa for entry into Italy) and at the same time complete the enrolment procedure in Esse3 by attaching the following documentation:

- original qualification (Master's degree or equivalent) and translation into Italian;
- declaration of value issued by the Italian representation in the country of origin or, alternatively, CIMEA certificate of comparability;

Via the link: <https://cimea.diplo-me.eu/uninsubria/#/auth/register> it is possible to register and access CIMEA's DIPLOME service, to obtain the issue of the above-mentioned certificates with facilitated deadlines.

The verification of the validity of qualifications obtained abroad is carried out upon delivery of the official documents. Until that moment, candidates are admitted to the course with reservations and may be excluded from the rankings if they do not meet the requirements. The University reserves the right to request the "on-site declaration of value" whenever necessary for the proper management of the doctoral student's career. Following enrolment, the University will confirm on the University portal that the procedure has been completed.

- 7.3 Students enrolled in PhD programmes are required to pay the annual regional tuition fee of € 140.00 and the stamp duty of € 16.00 in accordance with the "Regulations on student contributions for the academic year 2024/2025" available on the website www.uninsubria.it.

Please refer to these regulations for cases of exemption.

Withdrawal from the doctorate does not entitle the student to reimbursement of enrolment fees already paid. With regard to any insurance charges in compliance with the regulations in force, please refer to what is detailed in the enrolment forms.

Art. 8 – CONCURRENT REGISTRATION AND INCOMPATIBILITY

- 8.1 In accordance with the provisions of Law 33/2022, simultaneous enrolment in a PhD programme and a Bachelor/Master's degree programme with non-compulsory attendance is permitted. Simultaneous enrolment in a PhD course and a medical specialisation course is also permitted pursuant to Article 7 of Ministerial Decree 226/2021.

Any evaluations of merit will be referred to the Board of teachers of the PhD programme concerned, which will verify the compatibility of compulsory attendance with the existence of the conditions for the acquisition of the knowledge and skills necessary for the achievement of the educational objectives of each course.

- 8.2 The simultaneous enrolment and, consequently, the joint attendance of two PhD programmes (except in the case of co-doctoral agreements or enrolment in international doctoral programmes for the award of double or joint degrees) and of a PhD programme and a Bachelor's/Master's degree programme involving compulsory attendance are incompatible. At the time of enrolment, the doctoral student must opt for one of the two courses. In the event of a false declaration and if the double enrolment persists, the University shall issue a ruling by the Rector annulling the enrolment on the course and proceed to recover any sums paid by way of a grant in accordance with the law. The ban on double enrolment continues until the end of the last year of the course (three/four-year period).

Art. 9 – COURSE ATTENDANCE AND QUALIFICATION

- 9.1 The start of PhD programme activities coincides with the beginning of the academic year. Attendance to the PhD programme entails an exclusive and full-time commitment and takes place according to the annual schedule prepared by each PhD programme. In the three-year period, compulsory activities of linguistic and IT further training are scheduled, also with transversal activities common to several doctorates.

Each PhD student is ordinarily expected to carry out research and training activities, consistent with the PhD programme, at highly qualified institutions abroad, as reported in the Programme Sheet.

Activities other than training and research activities must be authorised by the teaching board and limited to those related to the acquisition of skills in the field of the PhD programme and compatible with the profitable performance of the training, teaching and research activities envisaged by the course.

- 9.2 Civil servants admitted to a PhD programme benefit, for the normal duration of the programme, from the leave of absence provided for by collective bargaining agreements or, if they are civil servants, from special leave for study purposes, in accordance with the needs of the administration, pursuant to Article 2 of Law 476 of 13 August 1984, with or without pay and unless they explicitly opt out, only if they are enrolled for the first time in a PhD programme, regardless of the disciplinary field.

At the time of enrolment, the employee, whether public or private, must inform the University about his/her work commitments, so that the Board of Professors can check the compatibility of work with the profitable performance of the training, teaching and research activities of the doctoral programme.

Doctoral students, as an integral part of their training project, may carry out, subject to the authorisation of the Board of Professors and without any increase in the grant, tutoring activities, including paid tutoring of students on degree and master's degree courses, as well as, within the limits established by the legislation and University Regulations in force, supplementary teaching activities.

- 9.3 PhD students are required to follow the "Code of Ethics, Code of Conduct and Principles of Research Integrity of the University of Insubria", issued by Rectoral Decree Office no. 656/2020 and in force since 16 October 2020.
- 9.4 Recipients of restricted scholarships are required to carry out the indicated research activity; to produce a report every six months indicating the time commitment (broken down into months in the company, at headquarters and abroad, if applicable) and a summary of the main activities carried out; to produce an annual report on the activity carried out, drawn up according to specific forms.
- 9.5 The available places referred to in this announcement which benefit from scholarships financed through the National Recovery and Resilience Plan (PNRR) referred to in Ministerial Decree 629/2024 must be based on the individual training plan that will be defined by the Teaching Body
- a) periods of study and research abroad, even if non-continuous, pursuant to art. 9, paragraph 3, of the decree of the Minister of University and Research of 14 December 2021, n. 226, over the three-year period;
 - b) periods of study and research periods at Public Administrations, companies or research centers from a minimum of six (6) months to a maximum of twelve (12) months, even if not continuous, over the three-year period;
- 9.6 The available places referred to in this announcement which benefit from scholarships financed through the National Recovery and Resilience Plan (PNRR) referred to in Ministerial Decree 630/2024 must include, on the basis of the individual training plan that will be defined by the Teaching Body:

- a) periods of study and research abroad, even if non-continuous, pursuant to art. 9, paragraph 3, of the decree of the Minister of University and Research of 14 December 2021, n. 226, over the three-year period;
- b) study and research periods in the company from a minimum of six (6) months to a maximum of eighteen (18) months, even if not continuous, over the three-year period.

9.7 The title of PhD is awarded at the end of the PhD cycle, upon passing the final examination, which is conditional upon the submission of a written dissertation (PhD thesis) that gives an account of original research, conducted with certainty of method and from which results of adequate scientific relevance emerge.

The awarding of the certificate of qualification is subject to the interested party depositing the final dissertation in the institutional open-access University archive, which will guarantee its preservation and public accessibility, in full, in part, or only in its bibliographic data.

Art. 10 – SCHOLARSHIPS

10.1 The total gross amount (three-year period) of the scholarship pursuant to Ministerial Decree 629 is € 70,000.00; the total gross amount (three-year period) of the scholarship pursuant to Ministerial Decree 630 is € 60,000.00 supplemented by the co-financing of companies. The PhD scholarship is subject to the payment of INPS social security contributions under separate management, in accordance with the reference regulations in force. The duration of the grant is equal to the entire duration of the PhD programme and is paid monthly. Those who have already received a scholarship for a PhD programme may not use it a second time. The PhD scholarship cannot be awarded to doctoral students who have renounced scholarship under the PNRR within XXXVIII cycle and XXXIX cycle.

The awarding of the doctoral grant is confirmed annually on condition that the doctoral student has completed the programme of activities planned for the year in question, subject to verification by the Board of Professors. In the event of suspension, renunciation or exclusion from the PhD programme, the grant is paid in proportion to the number of years of attendance.

10.2 The scholarship is increased by 50 per cent for a total period not exceeding 12/18 months in any three-year period for research activities abroad.

Starting from the first year, each doctoral student, with and without a scholarship, is guaranteed a budget of no less than 10 percent of the annual amount of the scholarship for research activities in Italy and abroad.

10.3 Scholarships may not be combined with research grants or with other scholarships awarded for any reason whatsoever, with the exception of those granted by national or foreign institutions to supplement training or research abroad.

The grant is compatible with income from employment as long as it does not exceed the amount of the grant. The income limit is to be understood as the gross amount received in the year in which the grant is most enjoyed.

Art. 11 – PROCESSING OF PERSONAL DATA



Pursuant to Legislative Decree no. 196 of 30 June 2003, as amended ("Personal Data Protection Code") and to the General Data Protection Regulation - EU Regulation 2016/679 the information on the processing of personal data is published on the University website at the following link: <https://www.uninsubria.it/la-didattica/dottorati-di-ricerca>.

**Art. 12 – INFORMATION ON THE APPLICATION OF LEGISLATION ON
THE PREVENTION OF CORRUPTION**

The University, in implementation of the relevant legislation, adopted its own Three-Year Plan for the Prevention of Corruption and appointed the Head of Corruption Prevention: The three-year plan is published on the institutional website at <https://www.uninsubria.it/amministrazione-trasparente/disposizioni-general>
Reports can be sent to the email address: anticorruzione@uninsubria.it

Art. 13 – RECRUITMENT AND HRS4R

The recruitment of doctoral candidates (or Early Stage Researchers according to the European definition) will be in accordance with the European Charter for Researchers (ECR) and the Code of Conduct for the Recruitment of Researchers (CCRR), which provide the general framework of guidelines and requirements for the roles, responsibilities and rights of these positions, ensuring that selection procedures are open, transparent and meritocratic.

The University of Insubria received the European quality award "HRS4R - Human Resources Strategy for Researchers" in February 2019: this certification recognises the effort of organisations in implementing the Charter and Code in their policies and practices and, finally, identifies those universities and institutions that create and promote a stimulating and encouraging research environment.

Art. 14 – PERSON IN CHARGE OF ADMINISTRATIVE PROCEDURE

Pursuant to Law no. 241 of 7 August 1990 and subsequent amendments and additions, the person in charge of the administrative procedure for the competition is the Head of the Education Coordination Office, Catia Imperatori. For further information please email: scuola.dottorato@uninsubria.it

Art. 15 – REFERENCE REGULATIONS

For any matters not specifically provided for in this notice, the University of Insubria shall comply with the relevant legislation in force and the University Regulations on PhD programmes.

For information regarding the competition procedures: scuola.dottorato@uninsubria.it
Varese, 10.06.2024

F.to il Rettore
Prof. Angelo Tagliabue



**Attachment to the competition notice for admission to the 40th cycle Research Doctorates
academic year 2024-2025 – PNRR (National recovery and resilience plan) scholarship**

LAW AND HUMANITIES	
Coordinator's name and contact details (e-mail and telephone)	Prof. Giulio Facchetti giulio.facchetti@uninsubria.it
Department head office	Department of Human Sciences, Territory and Innovation - DiSUIT
Reference office	dottorato.disuit@uninsubria.it
Website	https://www.uninsubria.eu/course-catalogue/course-list/law-and-humanities-20242025
Scientific area	04 - Earth sciences, 08 - Civil engineering and architecture, 10 - Ancient, philological-literary and historical-artistic sciences, 11 - Historical, philosophical, pedagogical and psychological sciences, 12 - Legal sciences, 13 - Economics and statistics, 14 - Political and social sciences
Scientific-disciplinary fields	ICAR/18; IUS/01; IUS/02; IUS/04; IUS/07; IUS/08; IUS/09; IUS/10; IUS/11; IUS/13; IUS/14; IUS/15; IUS/16; IUS/17; IUS/18; IUS/20; IUS/21; GEO/03; L-ANT/06; L-ART/02; LLIN/01; L-LIN/03; L-LIN/12; L-FIL-LET/02; L-FIL-LET/10; LFIL-LET/11 - M-GGR/01; M-PED/03; M-STO/02; M-STO/04; MFIL/01; M-FIL/02; SECS-P/02; SECS-P/06; SECS-P/08, SPS/02; SPS/03; SPS/08.
Research topics (please describe the topics briefly)	Through the dialogue between law and the other sciences, the Doctorate provides an articulated set of keys to understanding modern society, which is increasingly open to the international dimension. If the understanding of institutions and social systems is enhanced by legal, historical and philosophical knowledge, with the help of linguistic, literary and mediological skills, law must also make use of economic and scientific knowledge in order to regulate the complex phenomena that characterise the contemporary world. The doctorate will have an interdisciplinary and international character, and will be taught by Italian and foreign lecturers, mainly in the research fields of the ERC Social Sciences and Humanities. The training project aims to provide an integrated didactic offer in Italian and English, using appropriate methodological tools. The research directions concern interdisciplinary topics related to the relations between law and science (as in the case of the discipline of environment and climate change), the relations between law and literature (where the legal aspect is combined with historical, philosophical and literary research), the relations between law and languages (which allows interaction with specific problems of linguistics, translatology, art and cross-media communication), the relations between law and economics (which allows the assessment of the economic impact of legal rules).
Main language used	Italian
Expected duration	3 years



<p>Details of places with scholarship: n. 1 pursuant to Ministerial Decree 629</p>	<p>1. "Scholarship 1-:</p> <ul style="list-style-type: none"> • Thematic title: Knowledge and valorisation of the Romanesque artistic heritage in the province of Varese • Research topic: The project is divided into three phases: the first is to sample and re-evaluate the architectural emergencies of the Varese area dating back to the Romanesque age (11th and 12th centuries), starting from the critical review of the dating of the works suggested by sometimes outdated scholarly studies. These are interventions, for the most part, attributable to workers (stonecutters) belonging to the international historiographical category of the "Lombardy-Swiss lakes Artists", groups who will have to be mapped in their movements across the territory and included within a network of relations which also involve the Canton of Ticino, the Verbano-Cusio-Ossola area and Comasco. The second phase involves a reconstruction of the events that have occurred to this heritage over the centuries up to the present day, considering the different methods or potential for reuse to which many complexes or part of them have been or can be subjected. The third planned action is to outline communication, tourism promotion and awareness-raising plans for young generations at school level relating to this same shared heritage. • Company that co-finances (per Ministerial Decree 629): Provincia di Varese • Tutor teacher: Prof. Laura Facchin; cotutor Prof. Paola Biavaschi
<p>Period abroad and at a company</p>	<p>Ministerial Decree 629 - Minimum period of study and research activity of 6 months in the three-year period in public administrations, companies or research centers</p>
<p>Admission requirements</p>	<p>Master's Degrees in: Law, Cultural Anthropology and Ethnology, Archaeology, Landscape Architecture, Archive and Library Science, Architectural and Environmental heritage preservation, Cultural heritage preservation and restoration, Information and Publishing Systems, Modern European and American Languages and Literatures, Modern Languages for International communication and Cooperation, Linguistics, IT methodologies applied to Humanistic Disciplines, Territory and city planning, Design and Management of Tourism Systems, Design and Management of Educational Services, Psychology, International Relations, Cognitive Sciences, Political Sciences, Performing Arts and Media Production, Philosophical Sciences, Historical Sciences, Pedagogical Sciences, Welfare services and Policy, Sociology and Social Research, History of Art, Communication Theories, Criminology, Geography; Modern Philology; Philology, Ancient Literature and History; Musicology and Cultural Heritage.</p>
<p>Qualifications to be assessed and documents to be attached, scoring and test procedure</p>	
<p>Total score: 120 points total (qualifications + tests)</p>	



Assessment Criteria:

1. Criteria for the written test, with a maximum overall score of 30 points

The written test will consist of an essay on a topic proposed by the Commission. Each essay will be marked on the following parameters:

- linguistic quality
- effectiveness of the presentation;
- mastery of the subject and methodology;
- critical ability and reconstructive insight;
- Ability to select and use sources correctly;
- logical and systematic coherence.

Each of the above criteria will be marked by the Commission on a scale of 0 to 10, with a maximum of 60 points for each written test.

2. Criteria for the assessment of qualifications, with a maximum overall score of 60 points

1) Graduation score:

Marks from 60 to 70: 1 point

Marks from 71 to 80: 3 points

Marks from 81 to 90: 5 points

Marks from 91 to 98: 10 points

Marks from 99 to 103: 14 points

Marks from 104 to 107: 16 points

Marks from 108 to 109: 18 points

Mark 110: 19 points

Mark 110 cum laude: 20 points

2) Relevance of the Dissertation topic: from 0 to 5 points, keeping into account also the level of interdisciplinarity, interest and development potential of the subject matter.

3) Research activity:

a. Scientific publications (papers published in scientific journals, chapters in volumes, or books with ISBN): from 0 to 10 points overall, in relation to the relevance to the doctorate's subject matter, to the prestige and quality of the publications;

b. Research activity: from 0 to 10 points, with particular reference to the award of fellowships, research grants, periods, collaborations.

4) Further education: from 0 to 5 points, overall, with special reference to refining courses, master courses, dissertation awards, as well as in regard to the relevance to the doctorate's topic and the prestige of the qualifications.

5) Teaching at the university level: from 0 to 10 points, overall, with particular regard to workshops, contracts, and to the role of "topic expert", in relation to the quality and relevance to the doctorate's subject matter.

3. Criteria for the evaluation of the oral test, with a maximum overall score of 30 points

Interviews will be focused on determining the candidates' educational background, evaluating research projects proposed by the candidates and assessing their knowledge of English and any other language they have indicated.	
Documentation	Curriculum vitae and attachments A list of titles must be attached (under penalty of exclusion).
The documents must be submitted using the online Esse3 form by uploading a signed pdf following the templates	<p>Signed and dated Curriculum Vitae, complete with personal data, education and training, date of final dissertation and corresponding marks, institution at which the qualification was obtained, work and research experience, theses and publications (list), + authorisation to process data and declaration pursuant to Presidential Decree 445/2000 art. 76: "Anyone who issues false declarations, produces false documents or uses them in the cases provided for by this Consolidated Text shall be punished pursuant to the Penal Code and the special laws on the subject. The production of a deed containing data no longer corresponding to the truth is equivalent to the use of a false deed."_(add information as deemed necessary). Use CVeuropass</p> <p>The following documents must be submitted to provide information on the qualifications that will then be assessed on the basis of the self-certification:</p> <ol style="list-style-type: none"> Qualifications: <ol style="list-style-type: none"> Master graduates: Self-certification, acquired from the university's electronic record or prepared using the template, dated and signed in person or digitally, the degree title (Master's degree or equivalent), containing a list of the exams with the marks, the title of the dissertation, an indication of the university that awarded the degree, the date of award and the final mark Graduating students: Self-certification acquired from the institution's electronic record or prepared using the template, dated and signed by hand or digitally with: <ol style="list-style-type: none"> List of Master's degree exams with grades. Please specify the expected date of the Master's degree final dissertation (by 31 October of the current year) Bachelor's degree with date, final grade and list of exams with grades Final dissertation (Master's degree) or detailed summary of the thesis (in .pdf format) Research project (following the template for the first page) relevant to the above subject, if applicable (in .pdf format) Mandatory List of publications, if any, including conference presentations (template) indicating the DOI if open source, or attaching full article Additional qualifications (template): specialisation courses, PhD programmes, Master's courses, awards; Further qualifications (template): research grants and scholarships, tutoring, teaching activities (seminars, teaching contracts, teaching support), collaborations in research activities, awards, any other qualification deemed useful by the candidate for the purposes of evaluation; List of submitted titles (template).



Type of tests	<p><u>Assessment type:</u></p> <ol style="list-style-type: none">1) written test (max 30 points)2) evaluation of qualifications (max 60 points)3) oral exam (max 30 points) <p>The oral and written tests are face-to-face only and are considered passed if the candidate obtains a score of no less than 20/30 in each one.</p>
Admission to the assessment of qualifications	<p>Only candidates who obtain at least 40 points in the written test will be admitted to the assessment of qualifications and oral test.</p> <p>The list of those admitted to the oral test is published on the website normally 5 days before the date of the test.</p>
Test schedule	<p>The tests will take place in Como in September 2024.</p>



COMPUTER SCIENCE AND MATHEMATICS OF COMPUTATION	
Coordinator's name and contact details (e-mail and telephone)	Prof. Barbara Carminati – mail barbara.carminati@uninsubria.it – tel +39 0332 21 8951
Department head office	Theoretical and Applied Sciences department
Reference office	dottorato.dista@uninsubria.it
Website	http://phd.dista.uninsubria.it/
Scientific area	01 - Mathematics and informatics; 09 - Industrial and information engineering; 13 – Economics and statistics
Scientific-disciplinary fields	INF/01; ING-INF/05; MAT/01; MAT/03, MAT/ 05; MAT/07; MAT/08; SECS-S/01.
Research topics (please describe the topics briefly)	See Accreditation Sheet, max. 800 characters including spaces
Main language used	English
Expected duration	3 years
Details of places with scholarship: n. 2 pursuant to Ministerial Decree 630	<p>“Funded grant 1- name of organisation or project” Subject and title</p> <ul style="list-style-type: none"> Privacy preservation of our digital life is of utmost importance today, especially in view of the well-recognized relevance of building up data bases with public or community shared access. This is required for the advancement of Science, notably for the rapid development of diagnostics, therapies and new drugs, together with social accountability of public investigations, e.g. the outcome of census agencies. Last but not least, this is more and more needed for training AI algorithms. Implementing identity preservation schemes, developing methods for identifying and fixing possible biases and, last but not least, protecting the analyst's activity are actions requiring optimization and need to go beyond the state-of-the-art in schemes like Differential Privacy, generation of synthetic data and the so-called ORAM schemes, for Oblivious Random Access Machine, a technique used to anonymize the access flow between a trusted domain and untrusted data storage. All the techniques have something in common: high quality randomness is a must. Random Power is developing a platform for random bit stream generation based on quantum tunneling in a semiconductor structure; the technology is achieving maturity and the next step is the development of proprietary applications, capitalizing on the existing hardware, firmware and software. The incumbent is expected to take the lead in a project aimed for the analysis of the different privacy preserving solutions, building models to estimate their advantages and disadvantages, assess the role of randomness and implement in a proof-of-concept the most promising solution. Organization: Random Power Prof. Massimo Caccia, Prof. Alberto Trombetta Funded grant 2- Title: Multimodal LLM



	<ul style="list-style-type: none">• The advent of Large Language Models (LLMs) has revolutionised the field of Natural Language Processing (NLP) and Artificial Intelligence (AI). While current models exhibit remarkable proficiency in understanding and generating text, there is a growing need to extend these capabilities across multiple modalities, including text, speech, image, and video. This PhD thesis aims to investigate and develop multimodal LLMs that integrate these diverse modalities into a cohesive framework. The ultimate goal is to create powerful agents that seamlessly interact with the user in their preferred modality. A crucial point in this investigation is the improvement of existing multimodal embedding models that transform various input types into a unified representation space, facilitating the use of state-of-the-art Retrieval-Augmented Generation (RAG) techniques. This PhD project aims to advance the understanding and capabilities of multimodal LLMs, pushing the boundaries of what AI can achieve across various domains and applications. The project will be tackled in a collaborative environment between academia and industry. The objectives of the project concern: i) Multimodal training: develop training methodologies for LLMs that encompass multiple modalities, ensuring seamless integration and mutual enhancement of each modality; ii) Unified embedding Space: design and implement advanced embedding models to transform inputs from text, speech, image, and video into a shared representation space; iii) RAG techniques: leverage and enhance current RAG methods to improve the performance and versatility of multimodal LLMs; iv) Evaluation and benchmarking: establish rigorous evaluation protocols and benchmarks to measure the effectiveness and efficiency of the proposed models across various applications.• Organization: Digitiamo• Prof. Ignazio Gallo
Period abroad and at a company	Period abroad and at a company DM 630 - Period of study and research activities abroad for a minimum of 6 months in the three-year period
Admission requirements	Admission to a PhD course requires a Master's degree or another qualification obtained abroad and recognised as eligible.
Qualifications to be assessed and documents to be attached, scoring and test procedure	
<u>Total score: 120 points total (qualifications + tests)</u>	
Qualifications: 60 points max - minimum score to pass the test 40 points	
Qualifying test score: 60 points max - minimum score to pass the test 40 points	
Details of qualifications - 60 points max. total	



Maximum score: 20	The grades of the individual exams of the Master's degree and and Bachelor's degree, if candidates have already discussed their thesis, Master's degree final mark
Maximum score: 15	Scientific significance, degree of originality and relevance of the research project and thesis (if it has already been discussed) to the themes of the Doctoral Program; for the evaluation of the thesis candidates must submit at least a detailed abstract of the thesis itself; they may also submit the full version of the thesis);
Maximum score: 5	Conference presentations and publications related to the subjects of the PhD
Maximum score: 5	Training activities and professional experience pertinent to the themes of the Doctoral Program
Maximum score:15	Other qualifications, including language certifications and no more than 2 letters of recommendation
Documentation	Curriculum vitae and attachments
The documents must be submitted using the online Esse3 form by uploading a signed pdf following the templates	<p>Signed and dated Curriculum Vitae, complete with personal data, education and training, date of final dissertation and corresponding marks, institution at which the qualification was obtained, work and research experience, theses and publications (list), + authorisation to process data and declaration pursuant to Presidential Decree 445/2000 art. 76: "Anyone who issues false declarations, produces false documents or uses them in the cases provided for by this Consolidated Text shall be punished pursuant to the Penal Code and the special laws on the subject. The production of a deed containing data no longer corresponding to the truth is equivalent to the use of a false deed."_(add information as deemed necessary). Use CVeupass</p> <p>The following documents must be submitted to provide information on the qualifications that will then be assessed on the basis of the self-certification:</p> <p>2. Qualifications:</p> <p>A) Master graduates: Self-certification, acquired from the university's electronic record or prepared using the template, dated and signed in person or digitally, the degree title (Master's degree or equivalent), containing a list of the exams with the marks, the title of the dissertation, an indication of the university that awarded the degree, the date of award and the final mark</p> <p>B) Graduating students: Self-certification acquired from the institution's electronic record or prepared using the template, dated and signed by hand or digitally with:</p> <p>B1. List of Master's degree exams with grades. Please specify the expected date of the Master's degree final dissertation (by 31 October of the current year)</p> <p>B2. Bachelor's degree with date, final grade and list of exams with grades</p>



	<p>2. Final dissertation (Master's degree) or detailed summary of the thesis (in .pdf format)</p> <p>3. Research project (following the template for the first page) relevant to the above subject, if applicable (in .pdf format)</p> <p>8. List of publications, if any, including conference presentations (template) obligatorily indicating the DOI if open source, or attaching full article Up to a maximum of 5</p> <p>9. Additional qualifications (template): specialisation courses, PhD programmes, Master's courses, awards;</p> <p>10. Further qualifications (template): research grants and scholarships, tutoring, teaching activities (seminars, teaching contracts, teaching support), collaborations in research activities, awards, any other qualification deemed useful by the candidate for the purposes of evaluation;</p> <p>11. Reference letters (up to two), from university lecturers or researchers with whom the candidate has worked (candidates must enter the name and e-mail address of the contact person(s) identified when registering online for the competition and the letters will be submitted directly by the contact persons in the online procedure). The letters must specify the institutional role of the letter writer in his/her institution, the type of relationship he/she had with the candidate and provide an objective assessment of the candidate's skills and performance with reference to similarly experienced students known during his/her career, specifying the candidate's strengths and weaknesses, with reference to his/her potential to successfully complete the PhD programme. Reference letters can be submitted in the online procedure by the closing date of the call</p> <p>12. List of submitted titles (template).</p>
Type of tests	<p>Oral test</p> <p>The candidates who have obtained at least 40 points in the qualification's evaluation will be tested on their scientific interests, on the reasons which persuaded them to register for this specific Doctoral Program and on a description of their own research project or, as an alternative to the latter, on an analysis of a research field which is pertinent to the specific themes of the Doctoral Program. Knowledge of the English language will also be assessed. The admission test may be taken in English and remotely upon the candidate's request.</p>
Admission to the first test/assessment of qualifications	<p>Only candidates who obtain at least 40 points in the evaluation of qualifications will be admitted to the selection test</p> <p>The list of those admitted to the test is published on the website https://www.uninsubria.eu/course-catalogue/course-list/phd-doctoral-programs?title=&field anno accademico value=aa5&field ciclo dottorato _value=All normally 5 days before the date of the test</p>
Test schedule	Specify date and location: July 2024



	It is possible to request the coordinator (dottorato.dista@uninsubria.it) to carry out the tests remotely
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METHODS AND MODELS FOR ECONOMIC DECISIONS	
Coordinator's name and contact details (e-mail and telephone)	Prof. Andrea Vezzulli – mail andrea.vezzulli@uninsubria.it – tel +39 3393541281
Department head office	Dipartimento di Economia - DiEco
Reference office	dottorato.dieco@uninsubria.it
Website	https://www.phd.eco.uninsubria.it/
Scientific area	Area 13 - Scienze economiche e statistiche
Scientific-disciplinary fields	ECON-01/A, ECON-02/A, ECON-03/A, ECON-04/A, ECON-05/A, ECON-06/A, ECON-07/A, STEC-01/B, STAT-01/A, STAT-02/A, STAT-04/A, MATH-03/A, MATH-03/B, MATH-06/A, INFO-01/A, IINF-05/A
Research topics (please describe the topics briefly)	<p>The PhD program in Methods and Models for Economic Decisions trains young researchers to master the variety of theoretical and applied approaches that are used in economics for analyzing decision-making processes.</p> <p>The analysis of human economic decisions relies on methods and models that differ significantly across various fields of economics: classical decision theory is largely based on mathematical models, while more recent research in behavioral decision theory often relies on experimental methods. Econometric tools are used to investigate the determinants of specific decisions, such as those concerning labor, transports, or health. Computational methods are used to simulate how economic agents interact, and to investigate the economic effects of their interactions.</p>
Main language used	English
Expected duration	3 years
Details of places with scholarship: n. 2 pursuant to Ministerial Decree 630	<p>1. "Scholarship 1-:</p> <ul style="list-style-type: none"> • Thematic title: Exploring the Legal Frontiers of AI: Advancing Transparency and Accountability in Machine Learning through explainable Artificial Intelligence (XAI) • Research topic (max 1500 characters): As artificial intelligence (AI) systems become increasingly integrated into critical decision-making processes, the need for transparency and interpretability becomes paramount. eXplainable Artificial Intelligence (XAI) seeks to address this challenge by providing insights into AI models' decision-making processes. This research proposal aims to advance the field of XAI by exploring novel techniques and methodologies to enhance the interpretability of complex AI systems while preserving their performance. Leveraging recent advancements in machine learning interpretability, our study will investigate methods to provide intuitive explanations for AI predictions. Moreover, we will assess the impact of explainability techniques on model performance, robustness, and trustworthiness across various applications, including healthcare and autonomous systems. By bridging the gap between transparency and performance, our research endeavors to foster



	<p>the adoption of AI technologies in real-world settings while ensuring accountability and trust among users and stakeholders.</p> <ul style="list-style-type: none"> • Company that co-finances (per Ministerial Decree 630): CertX AG (Switzerland) • Tutor teacher: Davide La Torre, Matteo Rocca <p>2. "Scholarship 2</p> <ul style="list-style-type: none"> • Thematic title: Artificial Intelligence and Machine Learning for Crypto Prediction • Research topic (max 1500 characters): Cryptocurrency markets have witnessed unprecedented growth and volatility, presenting both opportunities and challenges for investors and traders. This research proposal seeks to harness the power of deep learning techniques to enhance cryptocurrency analysis and develop robust trading strategies. Leveraging deep neural networks, recurrent neural networks, and convolutional neural networks, our study aims to extract valuable insights from cryptocurrency data, including price movements, trading volumes, social media sentiment, and market dynamics. By applying advanced deep learning models to historical and real-time cryptocurrency data, we intend to uncover hidden patterns, correlations, and trends that can inform more accurate price predictions and trading decisions. Additionally, we will explore the integration of reinforcement learning algorithms to optimize trading strategies dynamically in response to changing market conditions. Through empirical validation and back testing across multiple cryptocurrency exchanges and assets, our research endeavors to contribute to the advancement of algorithmic trading in the cryptocurrency domain, ultimately empowering investors with more effective tools for risk management and portfolio optimization in this rapidly evolving market landscape. • Company that co-finances (per Ministerial Decree 630): Abraxas Capital Management Limited • Tutor teacher: Davide La Torre, Matteo Rocca
Period abroad and at a company	Ministerial Decree 630 - Period of study and research activities abroad for a minimum of 6 months in the three-year period
Admission requirements	Admission to a PhD course requires a Master's degree or another qualification obtained abroad and recognised as eligible. Please specify the list of master's degree classes, if applicable.
Qualifications to be assessed and documents to be attached, scoring and test procedure	
Total score: 120 points total (qualifications + tests) Qualifications: 60 points max Assessable qualifications; up to 60 points: <ul style="list-style-type: none"> • Graduation final mark: up to 10 points (for graduands the final mark will be estimated with the arithmetic average mark of the exams); • Master thesis: up to 10 points (applicants must submit the full thesis or at least an extended abstract). 	



- Criteria: scientific significance, degree of originality and relevance of the thesis with the PhD topics;
- Research project: up to 20 points (applicants must submit a research proposal).
Criteria: scientific significance, degree of originality and relevance of the project with the PhD topics;
 - Publications and conference presentations: up to 5 points (applicants must send pdf copies of max 10 publications)
Criteria: scientific significance, degree of originality and relevance of the publications with the PhD topics;
 - Training activities and professional experiences: up to 5 points.
Criteria: quantity, continuity and relevance with the PhD topics;
 - Any other assessable qualifications, including language and computer skills certifications, and up to 3 recommendation letters: up to 10 points.
 - topics relevant for the PhD program.

Only applicants with a minimum of 40 points on the qualification assessment are admitted to the interview.

Interview test score: 60 points max

Only applicants who have obtained at least 40 points are admitted to the interview.

Only applicants who have obtained at least 40 points in the qualification assessment are admitted to the interview.

Applicants are interviewed on their scientific interests and their motivations for applying to this specific PhD program.

The interview can be evaluated up to a maximum of 60 points and is considered as passed only if the applicant obtains at least 40 points.

The interview, which is public, tests the basic knowledge of economics and quantitative topics, as well as the knowledge of English, and could involve a discussion of possible research lines related to the PhD program.

Applicants may ask to undertake the interview remotely, either in English or in Italian. If the interview will be performed in Italian, there will be, in any case, an assessment of the candidate's English proficiency.

Details of qualifications - 60 points max. total

Maximum score: 10 points	Master's degree grade. In the event that the degree has not been obtained yet, the following will be assessed: the grades of the individual exams of the Master's degree, and Bachelor's degree final mark
Maximum score: 10 points	Master thesis: applicants must submit the full thesis or at least an extended abstract.
Maximum score: 20 points	Research project: applicants must submit a research proposal.
Maximum score: 5 points	Scientific publications and conference presentations related to the topics of the PhD (max. no. 10 publications to be attached in pdf format)
Maximum score: 5 points	Training activities and professional experiences



Maximum score: 10 points	Any other assessable qualifications, including language and computer skills certifications, and up to 3 recommendation letters
Documentation	Curriculum vitae and attachments
The documents must be submitted using the online Esse3 form by uploading a signed pdf following the templates	<p>Signed and dated Curriculum Vitae, complete with personal data, education and training, date of final dissertation and corresponding marks, institution at which the qualification was obtained, work and research experience, theses and publications (list), + authorisation to process data and declaration pursuant to Presidential Decree 445/2000 art. 76: "Anyone who issues false declarations, produces false documents or uses them in the cases provided for by this Consolidated Text shall be punished pursuant to the Penal Code and the special laws on the subject. The production of a deed containing data no longer corresponding to the truth is equivalent to the use of a false deed." (add information as deemed necessary). Use CVeupass</p> <p>The following documents must be submitted to provide information on the qualifications that will then be assessed on the basis of the self-certification:</p> <p>3. Qualifications:</p> <p>C) Master graduates: Self-certification, acquired from the university's electronic record or prepared using the template, dated and signed in person or digitally, the degree title (Master's degree or equivalent), containing a list of the exams with the marks, the title of the dissertation, an indication of the university that awarded the degree, the date of award and the final mark</p> <p>D) Graduating students: Self-certification acquired from the institution's electronic record or prepared using the template, dated and signed by hand or digitally with:</p> <p>B1. List of Master's degree exams with grades. Please specify the expected date of the Master's degree final dissertation (by 31 October of the current year)</p> <p>B2. Bachelor's degree with date, final grade and list of exams with grades</p> <p>2. Final dissertation (Master's degree) or detailed summary of the thesis (in .pdf format)</p> <p>3. Research project (following the template for the first page) relevant to the above subject, if applicable (in .pdf format) Mandatory</p> <p>4. List of publications, if any, including conference presentations (template) obligatorily indicating the DOI if open source, or attaching full article</p> <p>Up to a maximum of 10</p> <p>5. Additional qualifications (template): specialisation courses, PhD programmes, Master's courses, awards;</p> <p>6. Further qualifications (template): research grants and scholarships, tutoring, teaching activities (seminars, teaching contracts, teaching support), collaborations in research activities, awards, any other qualification deemed useful by the candidate for the purposes of evaluation;</p>



	<p>7. Reference letters (up to three), from university lecturers or researchers with whom the candidate has worked (candidates must enter the name and e-mail address of the contact person(s) identified when registering online for the competition and the letters will be submitted directly by the contact persons in the online procedure). The letters must specify the institutional role of the letter writer in his/her institution, the type of relationship he/she had with the candidate and provide an objective assessment of the candidate's skills and performance with reference to similarly experienced students known during his/her career, specifying the candidate's strengths and weaknesses, with reference to his/her potential to successfully complete the PhD programme.</p> <p>Reference letters can be submitted in the online procedure up to the closing date of the announcement</p> <p>8. List of submitted titles (template).</p>
Type of tests (specify the time schedule of the different tests or which test will be used)	<p>The tests are: ORAL TEST</p> <p>Applicants are interviewed on their scientific interests and their motivations for applying to this specific PhD program.</p> <p>The interview can be evaluated up to a maximum of 60 points and is considered as passed only if the applicant obtains at least 40 points.</p> <p>The interview, which is public, tests the basic knowledge of economics and quantitative topics, as well as the knowledge of English, and could involve a discussion of possible research lines related to the PhD program.</p> <p>Applicants may ask to undertake the interview remotely, either in English or in Italian. If the interview will be performed in Italian, there will be, in any case, an assessment of the candidate's English proficiency.</p>
Admission to the first test/assessment of qualifications	<p>Only candidates who obtain at least 40 points in the assessment of qualifications will be admitted to the oral interview</p> <p>The date, place and list of those admitted to the interview are published on the website https://www.uninsubria.eu/course-catalogue/course-list/phd-doctoral-programs?title=&field_anno_accademico_value=aa5&field_ciclo_dottorato_value=All normally 5 days before the date of the interview.</p>
Test schedule	<p>It is possible to request the coordinator (doctorate.dip@) to carry out the tests remotely.</p>



CHEMICAL AND ENVIRONMENTAL SCIENCES - DISCA	
Coordinator's name and contact details (e-mail and telephone)	Prof. Alessandro Maria Michetti – mail alessandro.michetti@uninsubria.it – tel +39 0312386650
Department head office	Dipartimento di Scienza e Alta Tecnologia, Via Valleggio 11 22100 Como
Reference office	dottorato.disat@uninsubria.it
Website	https://dottorato.disca.uninsubria.it/
Scientific area	03 – Scienze chimiche; 04 Scienze della terra; 05 – Scienze biologiche; 06 Scienze Mediche; 08 – Ingegneria civile;
Scientific-disciplinary fields	BIO/02; BIO/05; BIO/07; CHIM/01; CHIM/02; CHIM/03; CHIM/06; CHIM/12, FIS/03, GEO/03, GEO/04; ICAR/03, MED/44; ING-IND/24
Research topics (please describe the topics briefly)	In a world characterized by increasingly urgent environmental challenges and the need to develop innovative solutions to ensure liveable development, also in light of the recent international crises in Ukraine and Palestine, the Doctoral Course in Chemical and Environmental Sciences at the University of Insubria acts as a point of reference in the training of researchers and professionals capable of facing these challenges with competence, creativity and commitment. The research conducted within the DISCA encompasses two specialist curricula "Chemical Sciences" (Energy and Health) and "Environmental Sciences" (Environment and Territory). The laboratories involved in DISCA carry out investigations in various sectors of chemical and environmental sciences, make use of the local presence of foundations and public bodies engaged in research and technological development activities, and are an active part of networks of excellence in international research. Areas of interest include Analytical Chemistry, Physical Chemistry, Inorganic Chemistry, Organic Chemistry, Environmental Chemistry, Industrial Chemistry, Materials Science, Earth Sciences, Animal Biology, Plant Biology, Environmental Engineering, Industrial Engineering, Ecology, Environmental Medicine Work, and Climate Change.
Curricula (indicate max. 2 curricula ONLY if required for accreditation)	1. Chemical Sciences, 2 cofunded position with scholarships 2. Environmental Sciences, 4 cofunded positions with scholarships
Main language used	Italian, English
Expected duration	3 years
Details of places with scholarship pursuant to Ministerial Decree 630	1. "Scholarship 1-: <ul style="list-style-type: none"> • Thematic title: Studies of electrosynthetic methodologies to access compounds with potential biological activity • Research topic: Electrocatalysis emerges as an ideal tool for developing innovative and sustainable synthetic processes because it allows the in situ formation of highly reactive species from low-impact reagents. <p>The research project focuses on the study of new synthetic methodologies under electrocatalysis conditions for the preparation of products of biological and pharmacological interest.</p>

In particular, the focus will be on transformations of non-activated substrates, exploiting the direct functionalization of Csp3-H and Csp2-H bonds provides an efficient approach to the synthesis and modification of drugs, therefore attracting wide interest from both academic institutions and pharmaceutical industry.

The collaboration with PROCOS S.P.A., a leading company in the development and production of active pharmaceutical ingredients, will allow the development of studies toward targets in the pharmaceutical field.

- Company that co-finances (per Ministerial Decree 630): PROCOS S.P.A.
- Tutor teacher: Dr. Gianluigi Broggini

2. "Scholarship 2-:

- Thematic title: The Sacred Ibis as an alien species and its interaction with local Italian ecosystems
- Research topic: The Sacred Ibis (*Threskiornis aethiopicus*), a bird species native to sub-Saharan Africa, established populations in Italy, raising concerns about its impact as an alien species. This research project aims at investigating the invasion dynamics, the ecological interactions, and the consequences of the Sacred Ibis presence on native species and ecosystems in Italy, developing strategies to manage the species. The main objectives of the project are: assess species distribution and population dynamics: map current distribution of the Sacred Ibis in Italy, analyze population trends over time; identify interactions: examine interactions between the Sacred Ibis and native species, focusing on competition; assess ecosystem impacts: investigate the impacts of the Sacred Ibis on local ecosystems, aiming at detecting changes in species composition and/or habitat structure depending from the timing of Sacred Ibis presence; predict future spread and impacts: model the potential future spread of the Sacred Ibis and its likely ecological impacts under various management scenarios; develop management strategies: devise, evaluate and propose management strategies to mitigate the negative impacts of the Sacred Ibis on Italian ecosystems.

- Company that co-finances (per Ministerial Decree 630): OIKOS S.r.l.
- Tutor teacher: Dr. Adriano Martinoli

3. "Scholarship 3-:

- Thematic title: Development of protocols dedicated to the interaction of calorimetric tests with the definition of the expected consequences in deviations of industrial process variables
- Research topic: Following the accident that occurred at ICMESA in Seveso in 1976, a process of continuous regulation of the aspects linked to the prevention of major accident risks began. Currently the reference legislation consists of Legislative Decree no. 105/2015, whose main

innovations compared to previous regulations include a strengthening of the guidance and coordination role carried out by the Ministry of the Environment (art. 11) and a strengthening of the control system, through the planning and scheduling of inspections in factories (art. 27). One of the fundamental concepts of the legislation on major accident risks is that the potential risk is directly linked to the type and quantity of dangerous substances present within the plant. Having said this, the structured evaluation of both the etiology of the accidental events that can potentially arise during the storage or handling of substances defined as "dangerous" (in Top Event jargon) and the probability of occurrence associated with them remains essential. However, such an analysis is very complex and, in many cases, difficult to practice when talking about "multi-purpose" reactors where highly exothermic and fast reactions are carried out. The difficulty lies mainly in the complex interaction between deviation of process variables and expected behavior of the reacting system. The objective of this Doctoral project will therefore be to create a protocol that allows the planning of calorimetric tests (from differential scanning calorimetry to adiabatic calorimetry up to reaction calorimetry) that are able to qualify and quantify the expected consequences of the deviations analyzed in the hazards identification procedure (such as HAZOP, AOR, etc.). In particular, methods will be sought to select the necessary and sufficient test sets to be able to carry out all safety assessments, without exceeding the costs of the analysis.

- Company that co-finances (per Ministerial Decree 630): Axplora Farmabios S.p.A.
- Tutor teacher: Dr. Sabrina Copelli

4. "Scholarship 4-:

- Thematic title: Development of artificial intelligence in the definition of prevention and protection measures to protect the health and safety of workers
- Research topic: The project involves the definition and development of specific technologies and IT architectures (artificial intelligence) that allow for the complete and extremely accurate definition of measures to eliminate or reduce specific risks associated with work activities, i.e. health and safety management in the world of Work. Artificial Intelligence, with its potential to process large quantities of data (faster and more in-depth than humans), has never before been a fundamental asset for the correct identification of potential dangers and measures to contain them. In fact, the definition of risk, i.e. the probability that a specific harmful event (danger) occurs, is defined by a series of factors (regulatory compliance, similar accident statistics, context, bibliographies, etc.). Through the analysis of all these factors, the determination of the risk is therefore defined in an objective and certain way, and is not subject to the discretion of the opinion of the individual assessing party.

	<ul style="list-style-type: none"> • Company that co-finances (per Ministerial Decree 630): Studio Ingegneria Noemi Milani S.r.l. SB • Tutor teacher: Dr. Elisabetta Sieni <p>5. "Scholarship 5</p> <ul style="list-style-type: none"> • Thematic title: Probabilistic Evaluation of Fire Safety of Industrial Buildings • Research topic: Project objective is to provide the scholar with a solid preparation, both in terms of knowledge and basic skills (e.g., scientific method, self-expression and presentation skills, ability to handle research projects and work teams, teaching competences), as well as applications (e.g., transfer and evaluation of scientific-technological innovation to fire prevention, with special reference to A.I.) in order to conduct research and management activities at high quality levels. Research programme comprises formation events offering a common base on the research methodology and specific activities of development of knowledge both in the technical/scientific and in the human sciences, with particular regard to Chemistry, Physics, and Modelling for what concerns the simulation of fire scenarios, to Structural Mechanics for what concerns the behaviour of structures in fire, and to Probability and Social Sciences for what concerns the behaviour of occupants in all phases of the evacuation. • Company that co-finances (per Ministerial Decree 630): SAFETY CONTACT S.r.l. • Tutor teacher: Dr. Bruno Dal Lago <p>6. "Scholarship 6:</p> <ul style="list-style-type: none"> • Thematic title: Studies on the use of devulcanized waste materials and reversible vulcanization • Research topic: The devulcanization of elastomers allows to extend the life cycle of the vulcanized rubbers guaranteeing their reuse with the consequent reduction of the environmental impact. The project will focus on two aspects. The first concerns the implementation of devulcanization processes and the study of the mechanical properties and wear resistance of the new compounds obtained by introducing devulcanized materials. The second approach involves the study of vulcanization processes through reversible chemical reactions. In the latter case, the crosslinking between the chains will be formed not through sulfur bridges but by linkers from renewable sources, e.g. fatty acids. The reversibility of the process will allow the recovery of the devulcanized polymer at the end of the material's life cycle. The collaboration with VIBRAM S.P.A, a leading company in the production of soles for footwear, will allow the characterization of the new materials using the advanced instrumentation of the company's laboratories. • Company that co-finances (per Ministerial Decree 630): VIBRAM S.p.A.
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	• Tutor teacher: Dr. Lorella Izzo
Period abroad and at a company	Ministerial Decree 630 - Period of study and research activities abroad for a minimum of 6 months in the three-year period; Minimum period of study and research activity of 6 months in the three-year period in companies
Admission requirements	Admission to a PhD course requires a Master's degree or another qualification obtained abroad and recognised as eligible. Please specify the list of master's degree classes, if applicable.
Qualifications to be assessed and documents to be attached, scoring and test procedure	
Total score: 120 points total (qualifications + oral test)	
Qualifications: 60 points max	
Evaluable qualifications: <ul style="list-style-type: none"> - degree grade and curriculum of university studies, including the list of exams taken with their evaluation; the average of the grades obtained during the university course will be evaluated; - curriculum vitae, to be presented as per specifications in the "Documentation" section - research project related to the subject matter of the PhD programme, to be submitted mandatory as .pdf file - relevance of the thesis to the topics of the Doctorate; for the evaluation of the thesis it is necessary to send at least the title and summary of the thesis itself; - any scientific publications relating to the topics of the Doctorate; - any other qualifications that can be evaluated: presentations at conferences, participation in schools, work activities relating to the topics of the Doctorate, further qualifications, prizes and recognitions Only candidates who obtain at least 25 points in the assessment of qualifications will be admitted to the oral test	
Oral test score: 60 points max	
Details of qualifications - 60 points max. total	
Maximum score: 24	Master's degree grade. In the event that the degree has not been obtained yet, the following will be assessed: the grades of the individual exams of the Master's degree, and Bachelor's degree final mark
Maximum score: 8	Scientific publications related to the subjects of the PhD (establish max. no. of publications to be attached; e.g. max. 10)
Maximum score: 14	Teaching activities - tutoring, teaching support, seminars
Maximum score: 14	Additional training and awards - participation in schools, internships abroad, scholarships, prizes
Documentation	Curriculum vitae and attachments
The documents must be submitted using the online Esse3 form by uploading a signed pdf following the templates	Signed and dated Curriculum Vitae , complete with personal data, education and training, date of final dissertation and corresponding marks, institution at which the qualification was obtained, work and research experience, theses and publications (list), + authorisation to process data and declaration pursuant to Presidential Decree 445/2000 art. 76: "Anyone who issues false declarations, produces false documents or uses them in the cases provided for by this Consolidated Text shall be punished pursuant to the Penal Code and the special laws on the subject. The production of a deed containing data no

	<p>longer corresponding to the truth is equivalent to the use of a false deed</p> <p>NOTE: Candidates are required to submit their curriculum vitae in PDF format using the appropriate template which can be filled in and downloaded at the link: CVeuropass</p> <p>The following documents must be submitted to provide information on the qualifications that will then be assessed on the basis of the self-certification:</p> <p>4. Qualifications:</p> <p>A) Master graduates: Self-certification, acquired from the university's electronic record or prepared using the template, dated and signed in person or digitally, the degree title (Master's degree or equivalent), containing a list of the exams with the marks, the title of the dissertation, an indication of the university that awarded the degree, the date of award and the final mark</p> <p>B) Graduating students: Self-certification acquired from the institution's electronic record or prepared using the template, dated and signed by hand or digitally with:</p> <p>B1. List of Master's degree exams with grades. Please specify the expected date of the Master's degree final dissertation (by 31 October of the current year)</p> <p>B2. Bachelor's degree with date, final grade and list of exams with grades</p> <p>2. Final dissertation (Master's degree) or detailed summary of the thesis (in .pdf format)</p> <p>3. Research project (following the template for the first page) relevant to the above subject, if applicable (in .pdf format) Mandatory</p> <p>9. List of publications, if any, including conference presentations (template) obligatorily indicating the DOI if open source, or attaching full article</p> <p>Up to a maximum of ____</p> <p>10. Additional qualifications (template): specialisation courses, PhD programmes, Master's courses, awards;</p> <p>11. Further qualifications (template): research grants and scholarships, tutoring, teaching activities (seminars, teaching contracts, teaching support), collaborations in research activities, awards, any other qualification deemed useful by the candidate for the purposes of evaluation;</p> <p>12. List of submitted titles (template).</p>
Oral test	<p>Up to a maximum of 60 points for the oral test, including knowledge of the foreign language (10 points).</p> <p>Candidates who have obtained at least 25 points in the assessment of qualifications will be examined in person on their scientific interests; on the reasons that led them to enrol in this specific Doctorate; on the definition of one's own hypothetical research project, of which the candidate will illustrate the aims, methodologies, procedures and timing of implementation. The solidity of the cultural background will be assessed, with particular reference to the issues relating to the chosen curriculum, the ability to discuss the most</p>



	<p>important discoveries of recent years in the field of competence of the Doctorate, methodological, research, field and/or laboratory skills, and knowledge of the English language and other community languages.</p> <p>The oral test can be taken remotely on the Teams platform and/or in English at the request of the candidate.</p> <p>More information on the course on the DISCA web page at https://dottorato.disca.uninsubria.it/</p>
Admission to the oral test	<p>Only candidates who obtain at least 25 points in the assessment of qualifications will be admitted to the oral test</p> <p>The list of those admitted to the tests/assessment of qualifications is published on the website https://www.uninsubria.eu/course-catalogue/course-list/phd-doctoral-programs?title=&field_anno_accademico_value=aa5&field_ciclo_dottorato_value=All usually 5 days before the date.</p>
Oral Test schedule	<p>Oral tests will take place in person in Via Valleggio 11, Como, on a date between 9 and 10 September 2024, for the CV Chemical Sciences; and on September 9, 2024, for the Environmental Sciences CV; only for foreign candidates residing abroad (excluding Ticino), it will be possible to carry out the interview on Piattaforma Teams and/or in English by making a reasoned request to the Coordinator (dottorato.disat@uninsubria.it; alessandro.michetti@uninsubria.it) of carry out the tests remotely.</p>