

SUBJECT: Public competition for admission to PhD courses – 38th cycle - academic year 2022/2023

THE RECTOR

- CONSIDERING** Law n. 210 of July 3, 1998, art. 4;
- CONSIDERING** Law n. 240 of December 30, 2010, art. 19;
- CONSIDERING** the Ministerial Decree n. 226 of December 14, 2021;
- CONSIDERING** the University of Pavia Statute;
- CONSIDERING** the University of Pavia "Regulations for PhD courses" n. 900 of April 11, 2022 and subsequent modifications;
- CONSIDERING** the Ministerial Decree n. 247 of February 23, 2022;
- CONSIDERING** the resolution of the Academic Senate of March 21, 2022;
- CONSIDERING** the resolution of the Administrative Council of March 29, 2022;
- CONSIDERING** the need to issue the call for applications for public competitions to be admitted to the PhD courses, 38th cycle, administered by the University of Pavia

DECREES

Art. 1
Activation

1. The University of Pavia hereby announces public competitions for admission to the 38th cycle (academic year 2022/2023) of PhD courses, listed below according to their macro-areas:

MACRO-AREA OF SCIENCE AND TECHNOLOGY	
1	BIOENGINEERING, BIOINFORMATICS AND HEALTH TECHNOLOGIES
2	COMPUTATIONAL MATHEMATICS AND DECISION SCIENCES in cooperation with the University of Italian Switzerland (USI)
3	DESIGN, MODELING AND SIMULATION IN ENGINEERING
4	PHYSICS
5	ELECTRONICS, COMPUTER SCIENCE AND ELECTRICAL ENGINEERING
6	MATHEMATICS in cooperation with University of Milano-Bicocca, Istituto Nazionale di Alta Matematica "Francesco Severi" and CIAFM
7	CHEMICAL AND PHARMACEUTICAL SCIENCES, AND RELATED INDUSTRIAL INNOVATION
8	EARTH AND ENVIRONMENTAL SCIENCES
MACRO-AREA OF LIFE SCIENCE	
9	GENETICS, MOLECULAR AND CELLULAR BIOLOGY
10	EXPERIMENTAL MEDICINE
11	PSYCHOLOGY, NEUROSCIENCE AND DATA SCIENCE

12	BIOMEDICAL SCIENCES
13	TRANSLATIONAL MEDICINE
MACRO-AREA OF HUMANISTIC AND SOCIAL SCIENCES	
14	APPLIED ECONOMICS AND MANAGEMENT (AEM) in cooperation with the University of Bergamo
15	PRIVATE LAW, ROMAN LAW AND EUROPEAN LEGAL CULTURE
16	PUBLIC LAW, CRIMINAL AND INTERNATIONAL JUSTICE
17	SCIENCES OF THE LITERARY AND MUSICAL TEXT
18	HISTORY

- In Annex 1 (p. 18 ff.), which forms an integral part of this call, for each course the location, course coordinator, research topics, positions available, scholarships and other funding, name of the cooperating institutions and possible issue of double or joint degrees, selection procedure and qualifications assessed, admission test timetable and programs offered are specified. The PhD courses have a legal duration of three years, starting from October 1, 2022.
- The PhD courses activation is subject to the completion of the accreditation procedure or to the verification of the requirements conservation by ANVUR. Therefore, the selections will be carried out only for the PhD courses that have received the accreditation or its confirmation by the Ministry.
- The number of PhD positions mentioned in Annex 1 (p. 18 ff.) may vary, with subsequent provisions, according to additional funding made available after the publication of this call. In any case, the deadline for applications will remain unchanged.
- The funding provided by external entities will be assigned provided an agreement is reached between the University and the entity involved.
- This call for applications is equivalent to a notification to all intents and purposes. Further modifications, updates or additions to its content will be announced exclusively on the <http://phd.unipv.it/> website.**
- The presentation of the application as outlined in art. 5 implies the acceptance by the candidate of the rules contained in this call for applications. Failure to respect these rules will result in the candidate being excluded from the competition.

Art. 2

Admission requirements

1. Applications are invited from candidates, regardless of age and nationality, unless otherwise specified in Annex 1 (p. 18 ff.):
 - a. who hold an Italian *"diploma di laurea ante D.M. 509/1999 (vecchio ordinamento)/laurea specialistica/laurea magistrale"*, or an equivalent second-level degree issued by an AFAM (*Alta Formazione Artistica e Musicale*) institution;
 - b. who hold an academic degree awarded abroad and recognised by the examining Committee as being eligible for the selected PhD competition purpose only. Such degree must be comparable to an Italian second-level degree in terms of duration, level and disciplinary field. During the application procedure, candidates will be asked to upload, in addition to the qualifications required for the specific PhD course, the following documents, in order for their foreign degree to be recognised as eligible:
 - i. in case of italian and EU citizens: self-declaration, pursuant to D.P.R. 445/2000 and subsequent modifications, of all their academic degrees, including the courses attended, the marks received and the legal duration of the degree courses;
 - ii. in case of non-EU citizens: certificates of all their university degrees, in Italian or English, including the courses attended, the marks received and the legal duration of the degree courses. In case of certificates in a language different from Italian or English candidates will have to submit, together with the certificates, their sworn and legalized translation into Italian or English.
 - iii. any other document relevant to the assessment of a degree's eligibility, such as a Diploma Supplement or Dichiarazione di Valore in Loco.

The candidate may be required at any time to submit further documents, in order to verify the eligibility of his/her degree;
 - c. who expect to receive the degree mentioned in para. a and b no later than the date of enrolment in the PhD course. **Failure to attain the degree within the date of enrolment in the PhD course will result in candidates being excluded from the PhD course.** Such candidates, if successful, will be conditionally admitted and enrolled in the PhD course and will be required to submit by e-mail (concorso-dottorati@unipv.it) to the University administration office, no later than the date of enrolment in the PhD course:
 - i. in case of degree attained in Italy: a self-declaration, conforming to the model available at phd.unipv.it/call-38/, testifying they have attained the degree, together with copy of a valid identity document;
 - ii. in case of degree attained abroad:
 1. in case of italian or EU citizens: a self-declaration, conforming to the model available at phd.unipv.it/call-38/, testifying they have attained the degree, together with copy of a valid identity document;

2. in case of non-EU citizens: a certificate in Italian or English language testifying the degree attainment. In case of certificates in a language different from Italian or English candidates will have to submit, together with the certificates, their sworn and legalized translation into Italian or English.

Art. 3

Additional PhD reserved to candidates employed by companies, institutes or public research centres in highly qualified positions and additional PhD positions in higher-education apprenticeships

1. Employees of companies, institutes or public research centres in highly qualified positions may undertake, while keeping their job position and stipend, a PhD course. Such candidates' training objectives and research activities are arranged between the University and the company, institute or public research centre by means of a specific agreement. A member of the company can take part in the selection procedure. Candidates' interviews will include a discussion of the research topics proposed by the company. A separate ranking list is drawn up for these candidates. The agreement between the University and the company must be formalised no later than August 31, 2022. It will specify, among other things, the conditions and nature of the research to be carried out at the company, institute or public research centre and the division of the employee's time.
2. If the conditions exist, it is possible to establish PhD positions in apprenticeships with companies. This type of contract allows graduates aged up to 29 years to enrol in a PhD course and get simultaneously employed by a company. A separate ranking list is drawn up for these candidates. A member of the company can take part in the selection procedure. The Committee will examine, at the end of the interview, also the research topics proposed by the company. These positions will be activated provided that the company identifies a candidate suitable for their needs and that an agreement is formalised by August 31, 2022, specifying, among other things, the conditions and nature of the research to be carried out at the company, institute or public research centre and the division of the employee's time.
3. Candidates interested in these positions must select the appropriate administrative category during the application procedure, if available for their chosen PhD course.

Art. 4

Additional positions reserved to candidates with a scholarship from a foreign country, additional positions reserved to candidates holding a scholarship from a specific international mobility program, additional positions with scholarship reserved to candidates who graduated abroad

1. The "Additional positions reserved to candidates with a scholarship from a foreign country" are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for such positions. Applications for the "Additional positions reserved to candidates with a

scholarship from a foreign country” and the “Additional positions reserved to candidates holding a scholarship from a specific international mobility program” will be subject to a check by the University administration on the actual availability of the funding whose ownership is declared by the candidate. Candidates will be selected through a qualification assessment and, unless otherwise specified in Annex 1 for the specific PhD course, will also undertake an interview via videoconference, aimed at verifying candidates’ competence, ability and aptitude for research as well as their knowledge of Italian and/or English. Candidates must select the appropriate administrative category, if available for their chosen PhD course, during the application procedure. The examining committee will draw up specific reports and separate ranking lists.

2. “Additional position with scholarship reserved to candidates graduated abroad” are reserved to candidates holding a second-level university degree attained abroad. Candidates will be selected through a qualification assessment and an interview via videoconference. Candidates must select the appropriate administrative category, if available for their chosen PhD course, during the application procedure. The examining committee will draw up specific reports and a separate ranking list. In case no candidate is suitable for such position, the scholarship will be assigned to the candidate suitable for regular positions without scholarship, using the ranking order as the criterion for assignment.

Art. 5

Applications

1. Candidates who wish to participate in a PhD competition at the University of Pavia must **apply online** by the deadline of **June 24, 2022 at 12:00 (CET)**. **Applications can only be made via the online procedure in the candidates’ Personal Area** at the following link: https://studentonline.unipv.it/esse3/Home.do?cod_lingua=eng.

Applications submitted via any other means will not be considered. Candidates are responsible for ensuring that their application has been completed accurately and in full; complaints related to the malfunctioning of the online procedure will not be accepted. Candidates are highly recommended to complete the online application well in advance of the application deadline.

Candidates must **pay the application fee**, amounting to **€ 35.00, by June 24, 2022**. **Failure to pay the admission fee by the deadline will result in candidates being excluded from the competition. Under no circumstances will the admission fee be refunded.** Candidates applying for the “Additional positions reserved to candidates holding a scholarship from international mobility programs” are exempted from the application fee.

2. Candidates must be registered at https://studentonline.unipv.it/esse3/Home.do?cod_lingua=eng in order to access the online application procedure. Candidates who have yet to register must select the “Registration” tab and insert the requested data; then, by selecting the “Login” item and entering the username and password provided by the system, they will be able to access their Personal Area and apply for the PhD competitions.

Candidates who have already registered on the University of Pavia website must select only the "Login" tab and access the Personal Area by entering the username and password already in their possession. **Candidates are requested to check and update their personal information already present in the database, in particular the residence and the e-mail address which will be used for all communications related to the PhD competition.**

In order to submit the application, candidates have to select the "Admissions" item from the top right menu, then, from the same menu, the "Admission test" item, and then the PhD competition in which they would like to take part.

During the application procedure, candidates must:

- enter the information regarding their degree course and the details of a valid identity document; a copy of the same identity document will have to be uploaded during the application procedure;
- choose the PhD competition, the appropriate administrative category and the foreign language, from those listed in Annex 1 for each PhD course, whose knowledge will be verified during the interview;
- request to take the interview via videoconference, only if Annex 1 of the call for applications allows this option for the chosen course. Such request can no longer be modified once the online application is concluded;
- enter the name and e-mail address of the chosen referee/s, in case the reference letter/s is/are included among the qualifications assessed for the selected PhD competition (see Annex 1, p. 18 ff.);
- attach, via an upload, proof of the qualifications required for their chosen PhD competition (see Annex 1, p. 18 ff.) and the identity document whose details were entered during the procedure.

Qualifications and documents must be attached as .pdf files and must not exceed 5MB each. Each file's denomination must bear the candidate's surname and the type of the qualification (e.g. surname_curriculumvitae).

Candidates will have to prove they are in possession of the qualifications¹ issued by the Public Administration by means of a self-declaration, pursuant to art. 46 of D.P.R. 445/2000. The self-declaration must be duly dated and subscribed. The self-declaration regarding the exams taken must conform to the model available at phd.unipv.it/call-38/ or, if available, it can be downloaded from the website of the institution where the degree was awarded. The self-declaration must bear all information requested in Annex 1 for the PhD course for which the

¹ Pursuant to D.P.R. n. 445 of December 28, 2000 and subsequent modifications, Italian and EU citizens must provide a self-declaration attesting the following conditions and facts certified by the Italian Public Administration:

- a. enrolment in professional organisations or on lists managed by Italian Public Administration;
- b. membership of professional associations;
- c. qualifications and exams taken;
- d. professional qualifications, post-graduate qualifications, qualifying exams, training courses, refresher courses and technical qualifications;
- e. student status.

candidate is applying. **Non-EU applicants in possession of qualifications awarded by a non-Italian institution cannot submit a self-declaration, but must attach to the application a copy of the relevant certificates.**

A self-declaration uploaded in the application portal, to be valid and hence considered for evaluation by the Committee, must be signed with one of the following modalities:

- digital signature, in a format recognized by the Italian Digital Administration Code (CAD)
- original signature on a paper document, then scanned

and accompanied by a copy of a valid identity document. In the absence of one of these features, the document will be invalid.

The Committee will not consider for evaluation any of the following documents: unsigned curriculum vitae; invalid self-declarations; certificates, copies of diplomas, diploma supplements issued by an Italian Public Administration. Certificates issued by private entities are considered as valid.

With the exception of the degree required for admission (see art. 2, para. 1), all further qualifications must have been obtained by the deadline for applications.

The examining committee will take into consideration only the qualifications listed in Annex 1 (p. 18 ff.) for each PhD course.

Candidates with a disability (under the provisions of Law n. 104 of February 5, 1992 integrated by Law n. 17 of January 28, 1999) or affected by a Specific Learning Disability (under the provisions of Law n. 170 of October 8, 2010) should make a specific request in their application for the necessary assistance and, if required, for extra time to complete the selection tests. Candidates with disabilities are required to submit a medical certificate issued by the competent health authorities via the medical committees. Candidates with Specific Learning Disabilities must submit an appropriate clinical certificate issued no more than three years before by the National Health Service. Regions where it is not possible to diagnose such disorders as part of the specialist treatments carried out by the National Health Service can commit, within the limits of their human, instrumental and economic resources, the same diagnosis to a specialist or accredited structure. The documents testifying the disability must be submitted to the Centro Servizio di Ateneo - Servizio di Assistenza e Integrazione per gli Studenti Disabili e con DSA "SAISD" (Assistance and Integration Service for Students with Disabilities or Special Learning Disabilities) at least 15 days before the test in one of the following ways:

- hand-delivery to the SAISD office during the opening times (available at <https://saisd.unipv.it/index.php/en/contacts/>);
- e-mail to disabili@unipv.it, together with a copy of a valid identity document;
- fax to +39 0382/984954;
- registered letter with acknowledgement of receipt to: Centro Servizio di Ateneo - Servizio di Assistenza e Integrazione per gli Studenti Disabili e con DSA "SAISD" - P.zza Leonardo Da Vinci n. 16 – Pavia – Italy.

Based on the documents submitted by the candidate, the Vice-Rector for Disabilities and Special Needs, in coordination with the examining committee, will decide on the possible assistance and the extra time granted for the tests.

After the completion of the online application and before the deadline for applications (**June 24, 2022 at 12:00, CET**), candidates will be able to:

- modify the data previously entered. **The modifications will be permanently saved provided that the candidate brings the full application again to a conclusion.** At the end of the application procedure, candidates will have to reprint the application form;
- add, cancel or modify the documents uploaded (qualifications and identity document) by using the "Enter/modify qualifications" button;
- add, cancel or modify the data of the chosen referee/s, in case the reference letter/s is/are included among the qualifications assessed for the selected PhD competition (see Annex 1, p. 18 ff.), and possibly send a reminder to the referee/s already inserted. **The modifications will be permanently saved provided that the candidate brings the full application again to a conclusion.**

After the deadline for applications, modification or addition to the data or to the documents will be no longer possible.

If the PhD office notices irregularities or omissions in the documents uploaded by the candidates during the application, the candidates concerned will be duly informed via e-mail and will have the opportunity to regularize the documents within a peremptory deadline set by the office.

At the end of the procedure, candidates must print the application form and **pay by June 24, 2022 the participation fee of € 35.00. Failure to pay the application fee by the deadline will result in candidates being excluded from the competition.** The participation fee must be paid via the PagoPA system, with one of the following methods:

- **direct payment** (credit cards or bank transfers through the affiliated banks) in the "Payments" section of your Personal Area, by clicking on the invoice number, then on the "Pay by PagoPA" button;
- **deferred payment**, bringing your PagoPA invoice to a bank, a post office, a SISAL or Lottomatica point, or using your home banking system. Candidates can print the invoice in their Reserved Area, by clicking on the invoice number and then on the button "Print notice for PagoPA".

3. **The application form must be printed and hand-delivered to the examining committee on the day of the first on-site test (the written test if scheduled, otherwise the interview). Candidates who will not take any on-site test must send the signed application form, along with a copy of a valid identity document, to concorso-dottorati@unipv.it by the date of the interview.**
4. After the deadline for applications, the University administration will check the validity of the applications received and verify that the application fee of € 35.00 has been paid within the deadline. **In cases of invalid applications, or where the payment has not been made within the deadline, the candidate will be excluded from the competition.** On the phd.unipv.it/call-38/ website the list of the candidates admitted to the selection procedure will be published for each PhD course.

5. Candidates who wish to take part in more than one competition will have to submit a separate application for each, together with the qualification certificates requested, and pay a participation fee for each PhD competition selected.
6. All applicants are conditionally admitted to the PhD competitions while the University administration office checks that they actually possess the requirements provided in this call for applications, pursuant to D.P.R. n. 445/2000, artt. 43 and 71. The University administration reserves the right, at any time, to exclude candidates from the selection procedure. The University administration will also check the veracity of candidates' self-declarations: candidates found to have made false declarations may face criminal proceedings and administrative sanctions, pursuant to art. 76 of D.P.R. 445/2000.

Art. 6 **EDiSU benefits**

1. PhD students, pursuant to D.P.C.M. of April 9, 2001, are entitled to enjoy, under the same conditions of the other students, the benefits offered by the University of Pavia's EDiSU (Institution for the Right to Study).
2. Candidates who wish to enjoy these benefits (scholarships, accommodation, reduced meal prices at canteens etc.) must consult the <http://www.edisu.pv.it/> website where the call for applications for the above-mentioned benefits will be advertised. Candidates are allowed to apply for the EDiSU benefits before the PhD competition and before their possible enrolment in the PhD course.

Art. 7 **Examining Committee**

1. The Committees in charge of the PhD competitions are appointed by the Rector in accordance with the University of Pavia "Regulations for PhD courses".
2. One or more members of the Committee can take part in the selection procedure via videoconference.
3. The composition of the examining Committees will be published, after the announcement deadline has passed, on the phd.unipv.it/call-38/ website.

Art. 8 **Selection procedure**

1. Admission to the PhD courses is subject to the passing of a selection procedure aimed at assessing candidates' competence, ability and aptitude for research. In Annex 1 the tests dates and locations, selection procedures and notes for each PhD competition are listed.
2. The selection procedure can be of three types:

a. *Selection procedure by qualifications assessment and tests (written test and interview)*

The selection procedure by qualifications assessment and tests consists of a comparative assessment of the qualifications submitted by candidates, as well as two tests.

The admission tests consist of a written test and an interview, including a verification of candidates' knowledge of a foreign language, selected from those listed for each PhD courses and indicated by the candidate in the application. The examining committee can assign up to 30 points per test for the evaluation of each candidate.

The written test may consist of examinations, exercises and essays on topics related to the PhD course.

Candidates who have passed the written test with a score of 21 points or more are admitted to the interview. The interview is deemed to have been passed if a candidate obtains a score of 21 points or more.

If specified in Annex 1 (p. 18 ff.), candidates can ask to be interviewed via videoconference, by selecting the appropriate option during the online application procedure (see art. 5).

Unless otherwise specified in Annex 1, the examining committee can assign up to 10 points for candidates' qualifications for each PhD course, divided as indicated in Annex 1. The qualifications assessment takes place after the written test and before the correction of the papers. The results of the qualifications assessment will be announced before the interview.

b. *Selection procedure by qualifications assessment and interview*

Unless otherwise specified in Annex 1, the examining committee can assign up to 10 points for candidates' qualifications, divided as specified in Annex 1 for each PhD course. For each PhD course, a minimum threshold may be set for admittance to the interview, as indicated in Annex 1. The results of the qualifications assessment will be announced before the interview, with the modalities and timing indicated in Annex 1.

The interview includes a verification of candidates' knowledge of a foreign language, selected from those listed for each PhD course. The examining committee may assign up to 30 points as an interview points scale. The interview is deemed successful if a candidate obtains a score of 21 points or more.

c. *Selection procedure by qualifications assessment only*

Unless otherwise specified in Annex 1, the examining committee can assign up to 10 points to candidates' qualifications for each PhD course, divided as indicated in Annex 1. Candidates who have obtained at least 6 points out of 10 are admitted to the ranking list.

3. The examining committee will draw up specific reports. Candidates will be ranked in descending order by totaling the scores obtained by each candidate in the scheduled tests and the qualifications assessment.

4. If candidates have an identical score on the ranking list, the positions with scholarship will be awarded on a means basis, pursuant to D.P.C.M. of April 9, 2001 and subsequent modifications and additions; for positions without a scholarship, the youngest candidate will have it.
5. The President of the Committee will submit to the University Administration the competition reports.
6. **The admission tests schedule, indicated in Annex 1 of this call (p. 18 ff.), is equivalent to a notification to applicants. Possible modifications in the dates and locations of the tests will be announced on the phd.unipv.it/bando-38/ website. Candidates will not receive any further communication from the University administration office. Should the current situation of emergency persist, the Committees, in compliance with ministerial and rectoral resolutions, are entitled to establish new admission procedures for PhD courses, that will be communicated on the phd.unipv.it/bando-38/ website at least 7 days before the date of the first on-site test (see Annex 1 of this call).**
7. On the day of the on-site tests, candidates will be asked to show a valid identity document. On the same occasion, candidates will also have to sign the printed application form which must then be handed in to the Committee.
8. **Failure to take part in the admission tests will be considered as constituting a withdrawal from the application process.**

Art. 9

Admission to the PhD courses

1. The Rector, by Rectoral Decree, acts to verify the validity of the competition records and approves the ranking lists. Candidates who have placed highly on each ranking list are declared winners, provided they meet the admission requirements for access to the PhD competition and enrolment onto a PhD course.
2. Candidates are admitted to the PhD courses in the ranking list order until all positions for the given PhD course are taken. Should a candidate decide not to take up his/her place before the start of the course, their place may be taken by other candidates following the ranking list order. Should a candidate win more than one competition, he/she will have to choose only one PhD course and communicate this choice in writing.
3. Before the beginning of the educational activity of the PhD course, additional students already selected by specific committees in the framework of international programs involving the University of Pavia can be admitted to the course.

Art. 10

Public Administration employees

1. Prevailing laws regarding time off work or special leave will apply to any public administration employees admitted onto a PhD course.

Art. 11 Enrolment

1. The ranking lists will be published on the University's official noticeboard <http://www-5.unipv.it/alboufficiale/> and on the https://studentionline.unipv.it/esse3/Home.do?cod_lingua=eng website. In order to check their results, candidates have to login by entering the username and password provided at the end of the registration procedure, click on "Admissions" from the top right menu and then on "Admission test". **Candidates will not be informed personally: the publication of the ranking list is equivalent to an official notice to applicants.**
2. Candidates can appeal against the approval of the ranking list to the TAR (Regional Administrative Tribunal) within 60 days from the publication of the results on the University's official noticeboard, or make a special appeal to the President of the Republic within 120 days; in the absence of an appeal, the provision shall be incontrovertible.
3. **Successful applicants must enrol** in the PhD course by following the instructions provided at phd.unipv.it/call-38/.
4. Successful applicants who do not yet hold the second-level degree necessary to enrol in a PhD course will be conditionally admitted. By the date of enrolment in the PhD course they will have to provide the University Administration office with proof of graduation by following the procedure described in Art. 2, para. 1.
5. Candidates in possession of an academic degree obtained in a non-EU country, if successful, will have to provide the University administration, within a deadline agreed with the office, the following documents:
 - a. legalized degree certificates, bearing the list of the exams taken during their academic career and the marks obtained;
 - b. the original "*Dichiarazione di Valore in Loco*", issued by the competent Italian diplomatic representative in the country where the academic qualification has been attained.

In case of documents in a language different from Italian or English candidates will have to submit, together with the original documents, their sworn and legalized translation into Italian or English. The University administration reserves the right to ask students to provide additional documents if necessary to carry out the appropriate checks on the degree. The Administration office also reserves the right to ask students holding a foreign degree obtained within the EU to provide the "*Dichiarazione di Valore in Loco*" in cases where its validity is doubted.
6. Upon enrolment, non-EU citizens must submit to the Administration office, within a deadline agreed with the office, a photocopy of their residence permit or application for the residence permit.
7. Competition winners will have to pay, through the payment notice provided at the end of the application procedure, the enrollment fee, amounting to € 156.00.
8. Successful candidates with scholarship, **who do not enrol and pay the enrolment fee by the deadline of 5 days from the day following the publication online**

(https://studentonline.unipv.it/esse3/Home.do?cod_lingua=eng) of the ranking list, will be considered as having **forsaken** their position.

Successful candidates without scholarship, **who do not enrol and pay the enrolment fee by the deadline of 7 days from the day following the publication online** (https://studentonline.unipv.it/esse3/Home.do?cod_lingua=eng) of the ranking list, will be considered as having **forsaken** their position.

9. In case of any renunciations of the entitled candidates before the beginning of the training activities of the PhD course, the positions will be proposed to the following successful candidates in the final ranking. These candidates will be duly informed by e-mail and, if interested, will have to enroll and pay the enrollment fee as per para. 7 within the peremptory deadline of three days from the receipt of the e-mail. After that time, the candidate will be considered as having forsaken the position.
10. The University Administration reserves the right to check the validity of winners' declarations. Any applicants found to have made false statements will lose the benefits deriving from these declarations.

Art. 12 Scholarships

1. Unless otherwise specified in Annex 1, the annual gross amount of a PhD scholarship is € 16,243.00, including the I.N.P.S. contribution that is at the expense of the scholarship holder. PhD scholarships are regulated by the provisions of Law n. 476 of August 13, 1984, art. 4.
2. The Rector, by Rectoral decree, awards the scholarships to the successful candidates following the order of the ranking lists and until all scholarships for the given PhD course have been assigned.
3. Scholarships have a duration of one year and are confirmed annually, provided that the student has been admitted to the following year by the Academic Board.
4. The scholarships are paid in monthly deferred installments.
5. The scholarship amount is increased by 50%, for a period not exceeding 12 months in total, in case of research periods carried out at foreign institutions, duly authorized in advance by the Academic Board. This period can be increased up to 18 months overall in case of PhD students in joint supervision with foreign universities or PhD programs activated in cooperation with the institutions mentioned in art. 3 para. 2 of the Ministerial Decree n. 226/2021.
6. PhD scholarships cannot be combined with other scholarships awarded for any reason whatsoever. The only exceptions are scholarships assigned by national or international bodies to support with internships abroad the research activities. The compatibility of these scholarships with the PhD scholarship is decided by the Academic Board.
7. Students who have already benefited from a PhD scholarship, even partially, are not eligible for a second one.

8. To each PhD student, with or without scholarship, a budget for research activity in Italy and abroad is awarded, amounting to 10% of the scholarship, in accordance with the provisions of the Ministerial Decree n. 226/2021, art. 9.

Art. 13

PhD students' obligations

1. Admission onto a PhD course entails full-time and dedicated commitment. The Academic Board may set specific rules for PhD courses jointly supervised with companies, institutes or public research centres or students of medical specialization schools attending PhD courses.
2. The acceptance of scholarships labeled as PNRR implies the following obligations:
 - a. for basic PNRR scholarships, PhD students must spend a period of training and research abroad of at least six months;
 - b. for scholarships labeled as "PNRR PA", "PNRR Cultural Heritage" and "PNRR Digital and Environmental Transitions", PhD students must spend:
 - i. a period of training and research abroad of at least six months, and
 - ii. periods of training and research in companies, research centers or public administration from a minimum of six months to a maximum of twelve months;
 - c. for scholarships labeled as "PNRR DM 352", PhD students must spend:
 - i. a period of training and research abroad of at least six months, and
 - ii. periods of study and research in companies from a minimum of six months to as maximum of twelve months.

Art. 14

PhD students' teaching activity

1. Upon authorization of the Academic Board, the PhD students may act as a tutor, as well as fill a supplementary teaching role up to a maximum of 40 hours per academic year, as an integral part of their training project and without any increase of the amount of the PhD scholarship. The supplementary teaching roles are attributed by the Department Council, upon proposal of the professors in charge of the activities for which the collaborations are requested. PhD students in the medical area can take part in clinical and assistance activities.

Art. 15

Joint attendance with medical specialization schools

1. Final-year students of medical specialization schools can jointly attend a PhD course.
2. The year of joint attendance is followed by the exclusive attendance of the PhD course. The legal duration of the PhD course, including the year of joint attendance, remains unchanged.

3. Final-year students of medical specialization schools who have successfully passed the PhD competition can request the joint attendance to the University Administration, enclosing the following documents:
 - a. written authorization to the joint attendance, issued by the specialization school Committee, considering the distance between the two locations, the activity and the commitment requested by both the specialization school and the PhD course;
 - b. *curriculum vitae et studiorum* and self-declaration on the research activity carried out during the specialization school;
 - c. possible request of reduction of the PhD activities, depending on the consistency between the PhD project and the research activities already carried out during the specialization school.
4. The Training for Research Unit submits the request to the Academic Board of the PhD course, which decides whether to allow the joint attendance, based on the consistency between the research program of the PhD program and the research activity already carried out by the student, and considering the distance between the locations, the activity and the commitment requested by both the specialization school and the PhD course. Any request for a reduction of the PhD activities is approved by the Academic Board of the PhD program, subject to a positive evaluation of the consistency between the PhD project and the research activities already carried out during the specialization school. In case the request for joint attendance is not accepted, the enrolment in the PhD course is only allowed after renouncing the specialization school.
5. During the year of joint attendance, the PhD scholarship cannot be combined with any salary, however denominated, received for the activities of the specialization school.

Art. 16
Incompatibility

1. For what concerns any incompatibilities, candidates are invited to refer to the laws in force.

Art. 17
Ethical Code

1. PhD students will have to abide by the provisions of the University of Pavia Code of Ethics, available at the following link: <https://web.unipv.it/ateneo/statuto-regolamenti/>.

Art. 18
Final exam and attainment of the PhD degree

1. The title of PhD ("Dottore di ricerca") is attained following a positive assessment of a research thesis which contributes to the progress of knowledge or methodology in the research field chosen by the PhD student. The thesis is publicly discussed in front of a committee appointed by the Rector.

Unless otherwise specified in Annex 1, the PhD degree is awarded by the Rector of the University of Pavia.

2. The attainment of the PhD degree will be certified by the University administration after the upload of the complete version of their PhD theses in the University's electronic archives by the PhD graduate. The University will take care of depositing the theses, according with the current Italian laws, at the National Libraries of Roma and Firenze where they will be conserved and made available for public consultation.

Art. 19

Use of personal data

1. Pursuant to art. 13 of the General Data Protection Regulation (EU) 2016/679, the information supplied by candidates will be gathered by the University of Pavia's Research and Training for Research Unit and used for the management of the admission competitions and of the possible candidates' academic career. Granting consent for the handling of personal data is therefore obligatory and failure to do so will result in candidates' exclusion from the competition.
2. The information provided by the candidates will be communicated to the University of Pavia's administrative offices and to the departments directly concerned with the legal and financial positions of the successful candidates.
3. Candidates are entitled to the rights stated in art. 13 of the General Data Protection Regulation (EU) 2016/679, including access to their personal data, its modification, updating, integration, cancellation etc., and likewise reserve the right to oppose any use of the data other than the institutional purposes stated above.

Art. 20

Head of Administrative Procedures

1. The Manager of Administrative Procedures, under Law no. 241 of 7 August 1990 and subsequent modifications and additions, is Ms Sofia Baggini, Head of the Research and Third Mission Area. For information please contact the Training for Research Unit – Via Ferrata n. 5 – Pavia (Italy), tel. +39 0382-985021/4327/5983/5982/5937/5984, e-mail concorso-dottorati@unipv.it

Art. 21

Final regulations

1. In relation to any issues not explicitly specified in this announcement, the provisions of existing Italian legislation on PhD courses and of the University of Pavia's "Regulations for PhD courses" n. 900 of April 11, 2022 apply.
2. Only the Italian version of this call for applications will be binding in case of controversies.

Pavia, register date

MACRO-AREA OF SCIENCE AND TECHNOLOGY

PhD COURSE IN BIOENGINEERING, BIOINFORMATICS AND HEALTH TECHNOLOGIES

LOCATION: DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING

COORDINATOR: Prof. SILVANA QUAGLINI

RESEARCH TOPICS: bioinformatics, biomedical informatics, modeling of biological systems, biomedical technology, computational biomechanics, biological tissue engineering, biomaterials, synthetic biology

POSITIONS WITH SCHOLARSHIP	5	<p>2 scholarships funded by the University of Pavia</p> <p>2 scholarships funded by the Department of Electrical, Computer and Biomedical Engineering</p> <p>1 scholarship funded under the project "Facing Global Challenges", to undertake research in "Biomedical devices for digital fluidics for the Life Sciences"</p>
POSITIONS WITH "PNRR DM 352" SCHOLARSHIP	1	<p>1 scholarship to undertake research in "Development of methodologies and algorithms for the analysis of NGS data through bioinformatic pipeline and machine learning for boosting rare disease diagnostic", in cooperation with Engenome srl.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITHOUT SCHOLARSHIP	2	

ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	1	The "Additional positions reserved to candidates with a scholarship from a foreign country" are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for such positions. The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	9	

ADMISSION PROCEDURE: qualifications assessment and interview.

Candidates are allowed to take the interview in English and/or via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure (see art. 5 of this Call for applications).

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 15 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- motivation letter in Italian or English language (max 500 words) (up to **1** point);
- research project either in Italian or in English (max. 1500 words, bibliography not counted), related to PhD research topics. The project's structure should be as follows: short general introduction about the state of the art relative to the chosen topic; presentation of the research's objectives; discussion of the expected results; evaluation of the theoretical and/or practical implications (up to **5** points);
- exams taken during the candidate's degree courses, bearing the mark (up to **6** points);
- scientific publications (up to **1** point);
- curriculum vitae* (up to **2** points).

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 8/15.

The results of the qualifications assessment will be published online no later than **September 12, 2022**. The results will be posted on the Department of Electrical, Computer and Biomedical Engineering noticeboard and in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: September 19, 2022, at 9:30 (CET), "Aula Seminari" of the Department of Electrical, Computer and Biomedical Engineering (ex "Aula Dipartimento di Informatica e Sistemistica") - Floor D - Via Ferrata n. 5 – Pavia.

The research project will be discussed during the interview and is meant to verify the candidate's

aptitude towards research. It will not be binding if the candidate is admitted onto the PhD course.

Candidates who requested to take the interview via videoconference will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who intend to apply for the scholarships to undertake research in:

- Biomedical devices for digital fluidics for the Life Sciences
- Development of methodologies and algorithms for the analysis of NGS data through bioinformatic pipeline and machine learning for boosting rare disease diagnostic

must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFO: <http://phdbb.unipv.eu/>

The PhD course involves the following programs:

1. Big data and biomedical informatics
2. Diagnostic, therapeutic and rehabilitative bioengineering
3. Cell and tissue Bioengineering

PHD COURSE IN COMPUTATIONAL MATHEMATICS AND DECISION SCIENCES

LOCATION: DEPARTMENT OF MATHEMATICS "F. CASORATI"

COORDINATOR: Prof. LUCA FRANCO PAVARINO;

COOPERATING INSTITUTION: Università della Svizzera Italiana (USI)

The PhD degree will be jointly conferred by the Rector of the University of Pavia and the Rector of the Università della Svizzera Italiana (USI).

PhD students will have to spend a mobility period at the Università della Svizzera Italiana of at least six months over the three years.

RESEARCH TOPICS:

Computational Mathematics, Mathematical Analysis and Modeling: partial differential equation models and applications, functional analysis, nonlinear analysis, variational models and methods, calculus of variations

Numerical Analysis and Scientific Computing: numerical methods for ordinary and partial differential equations (finite elements, spectral elements, isogeometric analysis), approximation of data and functions, numerical linear algebra, parallel and distributed computing, numerical simulation

Optimization and Operational Research: Optimization methods, convex, integer, quadratic, and nonlinear programming, optimization algorithms, Control Theory

Biomathematics and computational medicine: mathematical and numerical modeling in Biology, Physiology, Neurosciences, Computational Cardiology, Epidemiology

Mathematical Physics: kinetic theory, granular media, statistical mechanics, diffusion equations, hyperbolic systems, socio-economic modeling

Computational Physics and Biophysics: mathematical and computer methods in Elementary Particle and High Energy Physics, Monte Carlo methods, quantum computing, biophysical models and Monte Carlo methods in Radiotherapy and Hadrotherapy

Computational Statistics: multivariate Statistics, data analysis, Bayesian Statistics, analytical models for Big Data and Data Sciences

Decision Sciences: decision models, decision under uncertainty, risk theory, game theory

Machine Learning, Artificial Intelligence, Computational Intelligence: Machine Learning, Statistical Learning, Artificial Neural Networks, Deep Learning; applications in Neuroscience, Neuroimaging, Cardiology, Epidemiology.

A more detailed description of the research carried out in this PhD program is available at <http://compmat.unipv.it/>. For details about research at the University of Pavia, see <http://matematica.unipv.it/>, for details about research at USI Institute of Computational Sciences see <https://www.ics.usi.ch>.

POSITIONS WITH SCHOLARSHIP	1	1 scholarship funded by USI
POSITIONS WITH "PNRR PA" SCHOLARSHIP	1	1 scholarship to undertake research in "Big Data and Machine Learning for measuring and monitoring corruptions phenomena by the analysis of public contracts". Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITH "PNRR DM 352" SCHOLARSHIP	4	1 scholarship to undertake research in "Development of metrics and models of heterogeneous data analysis for sustainability management policies of companies and organizations using "hybrid" information sources and machine learning algorithms", in collaboration with Widetech SpA; 1 scholarship to undertake research in "Quantum Machine Learning for Insurance and Asset Management applications",

		<p>in collaboration with Assicurazioni Generali SpA</p> <p>1 scholarship to undertake research in “Optimization and Artificial Intelligence for Neural Architecture Search”, in collaboration with Artificially;</p> <p>1 scholarship to undertake research in “Challenges and Opportunities of Natural Language Processing”, in collaboration with Zucchetti.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITHOUT SCHOLARSHIP	1	
TOTAL POSITIONS	7	

ADMISSION PROCEDURE: qualifications assessment and interview via videoconference. Candidates are allowed to take the interview in English.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 15 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- letter of intent written in English (max 2000 words) including the research project to be carried out during the PhD course. This will not be binding if the candidate is admitted to the PhD program: up to **3 points**;
- exams taken during the candidate's masters degree course: up to **4 points**;
- a maximum of 1 reference letter, issued and submitted directly by a professor from the university where the applicant's degree was awarded or by other professors/researchers who have had direct contact with the applicant. During the online application, the candidate will enter the contact data of the chosen referee who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, the letter must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee: up to **2 points**;
- abstract of the Master thesis, if available (max 1000 words), publications and preprints. Concerning publications and preprints, candidates may also send an abstract and indicate a DOI (Digital Object Identifier), or otherwise provide a link to a web repository. Only

publications from the last 5 years that are congruent with the research topics of the PhD course will be considered: up to **2 points**;

e. curriculum vitae: up to **4 points**.

Except for the reference letter, the qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 10/15.

The results of the qualification assessment will be published online no later than **July 12, 2022**. The results will be posted in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: July 18, 2022 at 9:00 (CET), via videoconference.

The interview will be held in Italian or English and will verify the candidate's knowledge of English. The interview will concern the main topics covered by the PhD course and will include a short presentation of the research project meant to verify the candidates' aptitude towards research.

Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who intend to apply for the scholarships to undertake research in:

- Big Data and Machine Learning for measuring and monitoring corruptions phenomena by the analysis of public contracts
- Development of metrics and models of heterogeneous data analysis for sustainability management policies of companies and organizations using "hybrid" information sources and machine learning algorithms
- Quantum Machine Learning for Insurance and Asset Management applications
- Optimization and Artificial Intelligence for Neural Architecture Search
- Challenges and Opportunities of Natural Language Processing

must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFORMATION: <http://compmat.unipv.it/>

DETERMINATION OF THE UNIVERSITY AFFILIATION

PhD students will be affiliated to the University (UNIPV or USI) providing their scholarship. Once the ranking list has been determined, selected candidates will be asked to express their preference regarding the university affiliation. The Academic Board of the PhD course will then assign the scholarships based on the candidates' preference, until the scholarships of one of the two Universities have all been attributed. The remaining scholarship grantees will be assigned the scholarships of the other University, irrespective of their indicated preference. The winner of the position without scholarship will be affiliated to the University of his/her choice.

**PhD COURSE
IN DESIGN, MODELING, AND SIMULATION IN ENGINEERING**

LOCATION: DEPARTMENT OF CIVIL ENGINEERING AND ARCHITECTURE

COORDINATOR: Prof. ALESSANDRO REALI

RESEARCH TOPICS: Civil Engineering, Hydraulic Engineering, Building Engineering and Architecture, Computational Mechanics, Industrial Engineering, Applied Mathematics, Materials Engineering.

POSITIONS WITH SCHOLARSHIP	6	<p>4 scholarships funded by the University of Pavia</p> <p>1 scholarship funded under the project "Facing Global Challenges" to undertake research in "3D Print and Advanced Materials"</p> <p>1 scholarship funded under the "Agreement for collaboration CNR_IRSA-Regione Lombardia" (project CNR-IRSA_FENOCCHI) to undertake research in "Hydrodynamic-ecological modelling of lakes in Lombardy to support the update of the regional Programme for the Protection of Water"</p>
POSITIONS WITH "PNRR PA" SCHOLARSHIP	3	<p>1 scholarship to undertake research in "Guidelines for the mitigation of the effects of climate change in the coastal landscape through an administrative regulation for the regeneration and development of campsites"</p> <p>1 scholarship to undertake research in "Ecological transition implementation throughout innovative digital processes in city planning and building"</p> <p>1 scholarship to undertake research in "Architecture, urban environment, and cultural heritage: the protection of museum contents from anthropogenic vibrations"</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITHOUT SCHOLARSHIP	2	

ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	1	The "Additional positions reserved to candidates with a scholarship from a foreign country" are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for such positions. The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	12	

ADMISSION PROCEDURE: qualifications assessment and interview. Candidates are allowed to take the interview in English and/or via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure see art. 5 of this Call for applications).

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- exams taken during the candidate's degree courses, bearing the marks (up to **5** points);
- abstract of the master thesis, scientific publications, preprints (up to **2** points);
- curriculum vitae* (up to **3** points).

Candidates who intend to apply for the positions with PNRR scholarship must upload a research project on the topic of the scholarship of their interest. The research topic will not be considered for assessment.

The minimum score to be admitted to the interview is 7/10.

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The results of the qualifications assessment will be published online no later than **September 15, 2022**. The results will be posted on the Department of Civil Engineering and Architecture noticeboard and in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: September 21, 2022, at 9:30 (CET), Aula MS1 of the Department of Civil Engineering and Architecture – Via Ferrata n. 3, Pavia.

The interview will concern the main topics covered by the PhD course. **During the interview, candidates are advised to present a research project (3 slides maximum, approximately 5 minutes).**

Candidates who requested to take the interview via videoconference will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

INFORMATION:

<http://phd.unipv.it/phd-program-in-design-modeling-and-simulation-in-engineering/>

The PhD course involves the following programs:

- a. Civil Engineering and Architecture – tracks: i) Structures and Materials; ii) Hydraulic, Environment & Energy Engineering; iii) Building Engineering/Architecture
- b. Computational Mechanics.

PLEASE NOTE: Candidates who intend to apply for the scholarships to undertake research in:

- 3D Print and Advanced Materials
- Hydrodynamic-ecological modelling of lakes in Lombardy to support the update of the regional Programme for the Protection of Water
- Guidelines for the mitigation of the effects of climate change in the coastal landscape through an administrative regulation for the regeneration and development of campsites
- Ecological transition implementation throughout innovative digital processes in city planning and building
- Architecture, urban environment, and cultural heritage: the protection of museum contents from anthropogenic vibrations

must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

**PhD COURSE
IN PHYSICS**

LOCATION: DEPARTMENT OF PHYSICS

COORDINATOR: Prof. DANIELA MARCELLA REBUZZI

TOPICS: Nuclear and subnuclear physics, theoretical and mathematical physics, condensed matter physics (including experimental and theoretical solid-state physics, optics and photonics, quantum information), interdisciplinary and applied physics (biomedical physics, energy, ICT-Information and communication technology)

POSITIONS WITH SCHOLARSHIP	8	n. 6 scholarships funded by the University of Pavia n. 2 scholarship funded by the National Institute of Nuclear Physics
POSITIONS WITH PNRR	1	1 scholarship to undertake research in "Experimental, computational and theoretical studies for BNCT dosimetry: an

SCHOLARSHIP		advanced use of ioniz-ing radiation to improve cancer therapy effectiveness in patients". Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITHOUT SCHOLARSHIP	0	
TOTAL POSITIONS	9	

ADMISSION PROCEDURE: qualifications assessment and interview. Candidates are allowed to take the interview in English and/or via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure (see art. 5 of this Call for applications). The candidates' qualifications must, in the judgement of the examining committee, meet the standards of a solid application story. Subsequently, the preparation of the applicants is evaluated in an interview, whose purpose is to demonstrate a comprehensive knowledge of basic Physics and to assess the student's analytic ability, creativity, and potential for successful completion of the PhD course in Physics.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- exams taken during the candidate's degree courses, bearing the marks (up to **4** points);
- Master's degree thesis, possible publications and professional experience. A 2-page abstract of the thesis must be attached to the application. Publications and similar documents must be attached to the application in their complete version (up to **2** points);
- outline of the research project (max 2 pages), in Italian or English. This will not be binding if the candidate is admitted onto the PhD course (up to **2** points);
- a maximum of 2 reference letters, issued and submitted directly by professors from the university where the degree was awarded or by other professors/researchers who have had direct contact with the applicant. During the online application, the candidate will enter the contact data of the chosen referees who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, these letters must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee (up to **2** points).

Except for the reference letters, the qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 6/10.

The results of the qualifications assessment will be published online no later than **July 15, 2022**. The results will be posted on the Physics Department noticeboard and in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: July 25, 2022, at 9:00 (CET), Physics Department, Via Bassi n. 6, Pavia.

The interview will concern the main topics covered by the PhD course and the research project.

Candidates who requested to take the interview via videoconference will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

Candidates who are interested in applying for the scholarship to undertake research in Experimental, computational and theoretical studies for BNCT dosimetry: an advanced use of ionizing radiation to improve cancer therapy effectiveness in patients" must explicitly state their interest for this topic to the examining committee before the interview. These candidates' interviews will therefore also include a discussion of the project topics. Successful candidates will be included in the general ranking and attributed a specific qualification for the above scholarship. The scholarship will be assigned to the first qualified candidate. Candidates who will renounce the scholarship will be excluded from the ranking.

INFORMATION: <http://www-2.unipv.it/dottorati/scienzeetecnologie/fisica/index.php>

The PhD course involves the following programs:

1. Physics of Fundamental Interactions;
2. Condensed Matter;
2. Interdisciplinary and Applied Physics.

**PhD COURSE
IN ELECTRONICS, COMPUTER SCIENCE
AND ELECTRICAL ENGINEERING**

LOCATION: DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING

COORDINATOR: Prof. ILARIA CRISTIANI

RESEARCH TOPICS: Photonics and Space Communications Systems, Computer Engineering and Automation, Electrical Engineering.

The PhD course includes three programs, among which an international program in cooperation with the Lodz University of Technology, Poland.



POSITIONS WITH SCHOLARSHIP	7	n. 7 scholarships funded by the University of Pavia
POSITIONS WITH "PNRR DM 352" SCHOLARSHIP	13	<p>1 scholarship to undertake research in "Ecological transition of transportation systems: Development of innovative power electronics converters, with high efficiency, for automotive and Motorsport applications", in collaboration with Marelli Europe SpA;</p> <p>1 scholarship to undertake research in "Optical processing unit for numerical calculations", in collaboration with Rebel Dynamics Srl;</p> <p>1 scholarship to undertake research in "Digital twin-driven approach towards smart manufacturing: applications and perspectives", in collaboration with Todeschini Mario S.r.l.;</p> <p>1 scholarship to undertake research in "Advanced Applications of Industrial Robotics: New Trends and Possibilities", in collaboration with RTA robotics S.r.l.;</p> <p>1 scholarship to undertake research in "Lithium Niobate integrated devices for signal processing", in collaboration with Advanced Fiber Resources Milan SRL;</p> <p>1 scholarship to undertake research in "Rehabilitation and Follow-Up Therapy Systems Adopting Dynamic Driving Simulator and Advanced Mechatronic Systems", in collaboration with Rebel Dynamics Srl;</p> <p>1 scholarship to undertake research in "Novel integrated RF and mm-wave components for B5G network", in collaboration with SIAE Microelettronica SpA;</p> <p>1 scholarship to undertake research in "Development of Decarbonizing paths in the industrial sector", in collaboration with Collarini Energy Consulting s.r.l.;</p> <p>1 scholarship to undertake research in "Research and development of innovative magnetic sensors for</p>



		<p>pneumatic drives for industrial automation", in collaboration with Pneumax;</p> <p>1 scholarship to undertake research in "Analysis, development and testing of bin picking solutions", in collaboration with ISS;</p> <p>1 scholarship to undertake research in "Kinematics and dynamics of multibody systems in real time applications", in collaboration with Rebel Dynamics Srl;</p> <p>1 scholarship to undertake research in "Design and analysis of integrated optical components for Silicon Photonics", in collaboration with Synopsys Srl;</p> <p>1 scholarship to undertake research in "Advanced SAR Antenna Concepts for microsatellites", in collaboration with ARESYS SRL.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITHOUT SCHOLARSHIP	0	
ADDITIONAL POSITIONS JOINTLY SUPERVISED WITH COMPANIES	1	Such position is reserved to candidates already employed by Pignone Tecnologie srl. The research topic will be "Digital Transition and Sustainability in the Energy Transition Context"
ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	1	The "Additional positions reserved to candidates with a scholarship from a foreign country" are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for such positions.
TOTAL POSITIONS	22	

ADMISSION PROCEDURE: qualifications assessment and interview via videoconference.

Candidates are allowed to take the interview in English.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- a. degree marks of both the bachelor and master's degree. If the master's degree hasn't been attained yet, the marks obtained during the master's degree course will be considered, provided that at least half of the total credits required for the master's course have been achieved by the date of the application submission (up to 6 points);
- b. publications (up to 1 point);
- c. curriculum vitae (up to 1 point);
- d. 2 reference letters, issued and submitted directly by professors from the university where the degree was awarded or by other professors/researchers who have had direct contact with the applicant. The Committee will assess the relevance of what is declared in the letter and the scientific reputation of the person signing the letter. During the online application, the candidate will enter the contact data of the chosen referees who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, the letter must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee (up to 2 points).

Candidates who intend to apply for the positions with PNRR scholarship must upload a research project on the topic of the scholarship of their interest. The research topic will not be considered for assessment.

Except for the reference letters, the qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 6/10.

The results of the qualifications assessment will be published online no later than **July 29, 2022**. The results will be posted on the Department of Electrical, Computer and Biomedical Engineering noticeboard and in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: September 15, 2022, at 9:30 (CET), via videoconference.

Candidates will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who intend to apply for PNRR DM 352 scholarships must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list for each scholarship.

INFORMATION: <http://www.unipv.it/dottIEIE>

The PhD course involves the following programs:

- a. Photonics and Space Communications Systems;
- b. Computer Engineering and Automation – including the curriculum in Financial Technologies (FinTech);
- c. Electrical Engineering (in cooperation with the Lodz University of Technology, Poland)

PhD COURSE IN MATHEMATICS

LOCATION: DEPARTMENT OF MATHEMATICS "F. CASORATI"

COORDINATOR: Prof. THOMAS WEIGEL (University of Milano-Bicocca)

COOPERATING INSTITUTION: University of Milano-Bicocca, Istituto Nazionale di Alta Matematica "F. Severi" (INdAM) and Consorzio Interuniversitario per l'Alta Formazione in Matematica (CIAFM).

The PhD degree will be jointly conferred by the Rector of the University of Pavia and the Rector of the University of Milano-Bicocca.

CURRICULA:

1. Algebra and Geometry;
2. Mathematical Analysis;
3. Numerical Analysis and Mathematical Modelling;
4. Mathematical Physics;
5. Probability and Statistics;
6. Mathematics in Life Sciences and Physics (in collaboration with the University of Surrey).

RESEARCH TOPICS:

With indications of the university Milano-Bicocca (MIB) or Pavia (PV) where they are developed:

Algebra and Geometry: group theory, theory of Lie algebras and their representations (MIB); category theory, algebraic geometry (PV), real and complex differential geometry (MIB and PV), symplectic geometry (MIB) and hyperbolic geometry (PV).

Mathematical Analysis: partial differential equations and their applications in physics, biology and engineering; control and optimization theory, nonlinear and functional analysis (MIB and PV); harmonic and geometric analysis (MIB); variational models and techniques, calculus of variations (PV).

Numerical Analysis and Mathematical Modelling: study of numerical methods (finite elements, isogeometric and virtual techniques) aimed at solving partial differential equations in the context of solid mechanics, fluid dynamics, interaction between fluids and structures, electromagnetism,

and and with focus on applications in engineering and biomathematics; constrained optimization models and methods; computer aided design, approximations of data and functions, numerical linear algebra (MIB and PV).

Mathematical Physics: soft matter mathematical modelling, kinetic theory, classical and quantistic field theory, complex systems (PV); fluid mechanics (PV e MIB), geometric and analytic theory of integrable systems, Frobenius manifolds, dynamical systems and mathematical methods of quantum mechanics (MIB).

Probability, Statistics and Mathematical Finance: stochastic differential equations, statistical mechanics, stochastic control theory (MIB and PV); random walks, systems with interacting particles, economical and financial applications (MIB); quantum probability, convergence of probability measures, finitely additive probability measures, bayesian statistics (PV).

Mathematics in Life Sciences and Physics: intersectoral subjects with the study of biological, biomedical, physical and thermomechanical models (MIB and PV, in collaboration with the University of Surrey).

A more detailed description of the research interests of the members of the Academic Board of the PhD course and of the research topics carried out by the two participating departments is available at <http://phd.unipv.it/phd-program-in-mathematics/>, as well as in the websites <http://www.matapp.unimib.it/> and <http://matematica.unipv.it/> of the two departments.

POSITIONS WITH SCHOLARSHIP	11	<p>4 scholarships funded by the University of Pavia;</p> <p>4 scholarships funded by the University of Milano-Bicocca;</p> <p>2 scholarships funded by Istituto Nazionale di Alta Matematica "F. Severi" (INdAM);</p> <p>1 scholarship funded by Università Cattolica del Sacro Cuore, to undertake research in "Symplectic geometry, geometric quantization and their ramifications"</p>
POSITIONS WITH PNRR SCHOLARSHIP	1	<p>1 scholarship to undertake research in "Mathematical models for the evolution of tumors or infections and study of related therapies".</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITHOUT SCHOLARSHIP	0	

ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	2	The "Additional positions reserved to candidates with a scholarship from a foreign country" are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for such positions. The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	14	

ADMISSION PROCEDURE: qualifications assessment and interview via videoconference.
Candidates are allowed to take the interview in English.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 15 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- a. curriculum vitae: up to **3 points**;
- b. exams taken during the candidate's degree courses, bearing the marks and both arithmetic and weighted mean (candidates must not consider honours while calculating the mean): up to **5 points**;
- c. a minimum of 1 reference letter, in Italian or English language, issued and submitted directly by professors from the university where the degree was awarded or by other professors/researchers who have had direct contact with the applicant. During the online application, the candidate will enter the contact data of the chosen referees who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, the letter must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee: up to **4 points**;
- d. abstract of the master thesis, publications and pre-prints. For publications and pre-prints, candidates can send an abstract and a link to an online repository or a DOI (*digital object identifier*): up to **3 points**.

In addition to the above-mentioned qualifications, candidates will have to submit a research project, in which they explain their possible interest for one of the topic-related scholarships (including the PNRR scholarship), and specify which of the two participating departments they find most suited to their scientific interests (Department of Pure and Applied Mathematics at the University of Milano Bicocca, or "F. Casorati" Department of Mathematics of the University of Pavia). The candidate's choice must be scientifically motivated. The research project will not be assessed, but it will be used as a starting point for the interview.

Except for the reference letters, the qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 7/15.

The results of the qualifications assessment will be published online no later than **July 16, 2022**. The results will be posted in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: July 25, 2022. Videoconference starting at 9.00.

The interview will be held in Italian or English and will in any case verify the knowledge of the English language. It will concern the main topics covered by the PhD course and will take its cue from the research project submitted by the candidate. Candidates are asked to prepare a presentation (max 15 minutes, with possible use of slides in pdf format).

Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

INFO: <http://phd.unipv.it/phd-program-in-mathematics/>

DETERMINATION OF THE AFFILIATION TO A DEPARTMENT: At the end of the enrollments, the Academic Board of the PhD program will attribute to each PhD student the affiliation to one of the two departments involved, based upon the preference expressed in the motivation letter, and using the ranking order as a priority criterion, until all the scholarships of one of the two Universities have been assigned. To the first winner, in descending order of the ranking list, who is unable to obtain a scholarship from his/her preferred University, an INdAM scholarship will be assigned; this candidate will be allowed to choose his/her affiliation. Once all the scholarships of either one of the two Universities and the first INdAM scholarship have all been attributed, the remaining winners will be assigned to the other department, irrespective of their indicated preference, and will be attributed the University scholarships first and then the second INdAM scholarship.

PLEASE NOTE: Candidates who intend to apply for the scholarships to undertake research in

- "Symplectic geometry, geometric quantization and their ramifications"
- "Mathematical models for the evolution of tumors or infections and study of related therapies"

must confirm their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

**PhD COURSE
IN CHEMICAL AND PHARMACEUTICAL SCIENCES,
AND RELATED INDUSTRIAL INNOVATION**

LOCATION: DEPARTMENT OF CHEMISTRY;

COORDINATOR: Prof. GIORGIO COLOMBO;

RESEARCH TOPICS:

Chemistry: Green Chemistry; Asymmetric synthesis, Computational methods in bio-inorganic systems; Ligands for nucleic acids; synthesis of biologically active compounds via pericyclic reactions; Polymers for energetics; Supramolecular devices; Functional nanomaterials; Surfaces with molecular monolayers; Adsorbants and solid catalysts for analytical applications; Biomimetic chemosensors; Materials for stone/wood supports; Structures/properties of metallo-enzymes; Photochemistry, C-H activation; Development of new generation perovskite based solar cells/Fabrication and characterization of perovskite based solar cells/Physico chemical characterization of nanostructured materials; Analytical Chemistry applied to forensic sciences; Electroanalytical chemistry; Adsorbents, Solid Catalysts; Optical sensors for analytical applications.

Pharmaceutical sciences: Identification of novel neuroprotective and anticancer drugs; macromolecule immobilization; Identification of new neuroprotective and antitumor agents; Immobilization of macromolecules; Nutraceuticals from agri-food waste: isolation, characterization, bioactivity and bioaccessibility studies; Study of Molecularly Imprinted Polymers-biological target interactions; Development of innovative supports for analytical applications in the pharmaceutical field; LC-MS for the characterization of proteins of pharmaceutical interest; Drug discovery from plants; New site-specific therapeutic systems, development of scaffolds for tissue repair (cutaneous, tendon-osteoarticular, central and peripheral nervous system and tubular organs); Development of nanoparticulate protein systems for the active delivery of drugs and for anticancer immunotherapy; Development of medicines based on mesenchymal stem cell derivatives for regenerative medicine and drug delivery; Development of medicinal products for advanced therapies, somatic cell therapy and tissue engineering.

Industrial innovation: Scale-up of products and processes in the chemical and pharmaceutical fields; development of formulation strategies in pharmaceutical industry.



POSITIONS WITH SCHOLARSHIP	12	<p>5 scholarships funded by the University of Pavia</p> <p>1 scholarship funded under the project "Facing Global Challenges", to undertake research in "Sustainable photovoltaics, energy storage and production, decarbonisation and 'Green' processes"</p> <p>1 scholarship funded under the project CATART, to undertake research in "Carbon nitride materials as photocatalysts for green chemistry: reaction mechanisms by operando soft X-ray absorption spectroscopy"</p> <p>1 scholarship funded under the project PRIN-2020 - 20209KYCH9, to undertake research in "Development of integrative computational methods for the study of protein interactions: applications to complex networks"</p> <p>1 scholarship funded under the project FARE EXPRESS, to undertake research in "Design of Functional Interfaces for Perovskite Based Advanced solar cells"</p> <p>1 scholarship funded by Istituto Superiore di Sanità, to undertake research in "Identification and application of an Analytical-Quality-by-Design approach for the development of analytical platform for the quality control of recombinant proteins"</p> <p>1 scholarship funded by RSE S.p.A. to undertake research in "Structural and computational studies of solid electrolytes for rechargeable sodium ion batteries"</p> <p>1 scholarship funded by Istituto Ganassini S.p.A. to undertake research in "Development of sustainable cosmetic products"</p>
POSITIONS WITH "PNRR CULTURAL HERITAGE" SCHOLARSHIP	1	<p>1 scholarship to undertake research in "Chemistry, environment, heritage and cultural heritage: innovative chemical investigations with a low environmental impact for the study of historical inks and paper supports"</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>



POSITIONS WITH "PNRR DM 352" SCHOLARSHIP	3	<p>1 scholarship to undertake research in "Design and characterization of new medical devices", in collaboration with 1 MED SA;</p> <p>1 scholarship to undertake research in "Design and development of glass vials siliconization to minimize the interaction with biotech- and nano-drug products", in collaboration with Soffieria Bertolini SpA;</p> <p>1 scholarship to undertake research in "Electrocatalysis in the ecological and digital transition", in collaboration with Flamma.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
ADDITIONAL POSITIONS WITH SCHOLARSHIP RESERVED TO CANDIDATES WHO GRADUATED ABROAD	1	This position is reserved to candidates holding a second-level degree attained abroad. The Committee will draw up specific reports and a separate ranking list.
POSITIONS WITHOUT SCHOLARSHIP	1	
TOTAL POSITIONS	18	

ADMISSION PROCEDURE: qualifications assessment and interview. Candidates are allowed to have the interview in English and/or via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure (see art. 5 of this Call for applications).

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 15 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

1. arithmetic average of the marks obtained in the exams taken during the candidate's degree courses, to be calculated and declared by the candidates themselves; in the case of degree

obtained in a foreign institution, the committee will use the ECTS grading tables (**up to 9 points**);

2. *curriculum vitae et studiorum* (**up to 3 points**);
3. motivation letter, either in Italian or English (max 1000 characters, spaces included), along with / including a research project developed by the candidate (max 3000 characters, spaces included; max 2 figures), either in Italian or English (**up to 3 points**). The project, which will not be binding if the candidate is admitted onto the PhD program, must contain a general introduction about the state of the art on the topic, a presentation of the research objectives, a discussion of the expected results as well as an evaluation of the theoretical and/or practical implications.

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 9/15.

The results of the qualifications assessment will be published online no later than **September 8, 2022**. The results will be posted on the Chemistry Department noticeboard and in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: September 15, 2022, at 10:00 (CET), at the Department of Chemistry – Aula CG3 (General Section) – Viale Taramelli n. 12 – Pavia.

The interview will concern the topics covered by the PhD course and may include a discussion on the candidates' experimental thesis and/or on the research project, in order to assess their aptitude and potential.

Candidates who requested to take the interview via videoconference will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who are interested in applying for the scholarship to undertake research in "Sustainable photovoltaics, energy storage and production, decarbonisation and 'Green' processes" must explicitly state their interest for this topic to the examining committee before the interview. These candidates' interviews will therefore also include a discussion of the project topics. Successful candidates will be included in the general ranking and attributed a specific qualification for the above scholarship. The scholarship will be assigned to the first qualified candidate. Candidates who will renounce the scholarship will be excluded from the ranking.

Candidates who are interested in applying for the scholarships to undertake research in:

- Carbon nitride materials as photocatalysts for green chemistry: reaction mechanisms by operando soft X-ray absorption spectroscopy
- Development of integrative computational methods for the study of protein interactions: applications to complex networks
- Design of Functional Interfaces for Perovskite Based Advanced solar cells
- Identification and application of an Analytical-Quality-by-Design approach for the development of analytical platform for the quality control of recombinant proteins

- Structural and computational studies of solid electrolytes for rechargeable sodium ion batteries
- Development of sustainable cosmetic products
- Chemistry, environment, heritage and cultural heritage: innovative chemical investigations with a low environmental impact for the study of historical inks and paper supports
- Design and characterization of new medical devices
- Design and development of glass vials siliconization to minimize the interaction with biotech- and nano-drug products
- Electrocatalysis in the ecological and digital transition

must explicitly state their interest for this topic to the examining committee before the interview. These candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFORMATION: please contact the PhD Coordinator Prof. Giorgio Colombo: phd.cfi@unipv.it

PhD course involves the following programs:

- a. Chemistry;
- b. Pharmaceutical Sciences;
- c. Industrial Innovation.

PHD COURSE IN EARTH AND ENVIRONMENTAL SCIENCES

LOCATION: DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES;

COORDINATOR: Prof. ROBERTO SACCHI;

RESEARCH TOPICS:

- Polymorphic phase transformation of alpha -beta quartz and implications for fracture nucleation in the lower crust
- Petrology and geochemistry of the lower crust
- "Plastic agglutinated" reefs by the sedentary polychaete Sabellaria Lamarck, 1818 in the Mediterranean Sea: microplastic uptake, accumulation and associated risk
- Developing and testing eco-engineering solutions to increase native biodiversity and reduce biopollution in ports
- Northern Tanzania Raptors Project: an in-depth study of the secretary bird in the Serengeti Ecosystem, Arusha and Tarangire National Parks
- Assessing the origin and migration of potentially toxic elements in water resources from the former Balangero asbestos mine using isotope techniques
- Assessing permafrost response to climate warming in the Eastern Italian Alps
- Models and technologies to monitor and predict Earth's crust movements

- Microplastic contamination in Lake Lugano's watershed: Environmental matrix and macroinvertebrate fauna

POSITIONS WITH SCHOLARSHIP	4	3 scholarships funded by the University of Pavia 1 scholarship funded under the project "Facing Global Challenges", to undertake research in "Models and technologies to monitor and predict Earth's crust movements".
POSITIONS WITHOUT SCHOLARSHIP	0	
ADDITIONAL POSITIONS JOINTLY SUPERVISED WITH COMPANIES	1	This position is reserved to candidates already employed by Scuola universitaria professionale della Svizzera italiana (SUPSI), located in in Stabile Le Gerre, 6928 Manno (Switzerland), to undertake research in "Microplastic contamination in Lake Lugano's watershed: Environmental matrix and macroinvertebrate fauna". The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	5	

ADMISSION PROCEDURE: qualifications assessment and interview via videoconference. Candidates are allowed to take the interview in English.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

1. arithmetic mean of the marks obtained in the exams taken during the candidate's degree courses, to be calculated and declared by the candidates themselves (**up to 5 points**);
2. research project and qualifications (**up to 5 points**). The research project (max 5000 characters, spaces included), in Italian or English, must concern one of the research topics included in the PhD course. The project is meant to verify the candidate's aptitude towards research. It will not be binding if the candidate is admitted onto the PhD course. The qualifications include research and development activity for public and private institutions, scientific publications, postgraduate scientific education (internships, training courses, participation in conferences).

The qualifications must be submitted according with the procedure indicated in art. 5, para. 2 of this call for applications.



UNIVERSITÀ DI PAVIA
Area Ricerca
e Terza Missione

The minimum score to be admitted to the interview is 5/10.

The results of the qualifications assessment will be announced no later than **July 15, 2022**. The results will be posted in the Personal Area of the candidate in the University website. This can be accessed using the login information provided during registration.

INTERVIEW: July 25, 2022, at 9:30 (CET), via videoconference.

The interview will be held in Italian or English and will be an opportunity to verify the candidate's knowledge of English. The interview will consist of a short presentation of the research project (max 15 minutes; the use of technological support such as slides is encouraged) that is designed to verify the candidate's aptitude towards research. The research project presented by the candidate will not, in any way, be binding if the candidate is admitted onto the PhD course. More details on programs and research topics are available at the following website: <http://phd-dsta.unipv.it/>.

Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who intend to apply for the scholarships to undertake research in "Models and technologies to monitor and predict Earth's crust movements" must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFO: <http://phd-dsta.unipv.it>

MACRO-AREA OF LIFE SCIENCES

PhD COURSE IN GENETICS, MOLECULAR AND CELLULAR BIOLOGY

LOCATION: DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"

COORDINATOR: Prof. DAVIDE SASSERA

RESEARCH TOPICS:

- Functional and population genomics of humans and animal species, archaeogenomics and epigenomics.
- Molecular and cellular bases of hereditary and complex disorders, aging, cell and organ differentiation and development, evolutionary mechanisms.
- DNA replication and repair, transcription, regulation of gene expression.
- Microorganisms and viruses of clinical and biotechnological relevance. Interactions between prokaryotes and eukaryotes.
- Biotechnological and molecular approaches for the improvement of crop species.
- Functional and structural characterization of potential targets for pharmacological drugs, development of therapeutic molecules and study of mechanisms of action.

For further information please visit: <http://phdsgb.unipv.eu/site/en/home/research-topics.html>

The call includes 13 positions (see table below).

POSITIONS WITH SCHOLARSHIP	10	9 scholarships funded by the University of Pavia 1 scholarship funded under the project "Facing Global Challenges", to undertake research in "Emerging Viral Threats"
POSITIONS WITH PNRR SCHOLARSHIP	2	1 scholarship to undertake research in "Improving photosynthesis for sustainable production of Food, Bioenergy and for mitigation of Climate Change" 1 scholarship to undertake research in "New redox enzymes for biomass bio-transformations and green

		technologies" Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITHOUT SCHOLARSHIPS	3	
TOTAL POSITIONS	15	

ADMISSION PROCEDURE: qualifications assessment and tests (written test and interview). Candidates are allowed to take the tests in English.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- reference letters (up to two) in Italian or English, issued and submitted directly by professors from the university where the degree was awarded or by other professors/researchers who have had direct contact with the applicant. During the online application, the candidate will enter the contact data of the chosen referee who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, the letter must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee (up to **1 point**);
- scientific publications. Only publications from the last 5 years that are congruent with the research topics of the PhD course will be considered (up to **1 point**);
- arithmetic mean of the marks obtained in the exams taken during the candidate's degree courses, to be calculated and declared by the candidates themselves (up to **8 points**).

Candidates who intend to apply for the positions with PNRR scholarship must upload a research project on the topic of the scholarship of their interest. The research topic will be assessed during the interview only.

Except for the reference letters, the qualifications must be submitted according to the procedure described in art. 5, para. 2 of this call for applications.

WRITTEN TEST: September 5, 2022, at 9:30 (CET), Aula "Arturo Falaschi" of the CNR Institute of Molecular Genetics "Luigi Luca Cavalli Sforza" - Via Ferrata n. 1 – Pavia;

INTERVIEW: September 7, 2022, at 9:30 (CET), Aula "Arturo Falaschi" of the CNR Institute of Molecular Genetics "Luigi Luca Cavalli Sforza" - Via Ferrata n. 1 – Pavia.

PLEASE NOTE: Candidates who intend to apply for the scholarship to undertake research in "Emerging Viral Threats" **or for the PNRR scholarships** must state their interest to the examining

committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up specific ranking lists.

INFORMATION: <http://phdsqb.unipv.eu/site/en/home/admission-procedures.html>

PhD COURSE IN EXPERIMENTAL MEDICINE

LOCATION: DEPARTMENT OF INTERNAL MEDICINE AND MEDICAL THERAPEUTICS

COORDINATOR: Prof. STEFANO PERLINI

RESEARCH TOPICS: general medicine, medical therapy, experimental surgery, microsurgery, anesthesiology, biomedical technologies, bioethics-noetics in surgical patients.

POSITIONS WITH SCHOLARSHIP	5	4 scholarships funded by the University of Pavia 1 scholarship funded by the Department of Clinical-Surgical, Diagnostic and Pediatric Sciences, to undertake research in "Short and long term outcome evaluation in a critically ill patient with severe lung failure".
POSITIONS WITH PNRR SCHOLARSHIP	1	1 scholarship to undertake research in "Sviluppo di modelli sperimentali di patologia rara polmonare (fibrosi polmonare post infiammatoria) mediante PCLSC (precision cut lung slice cultures) o lmodeling di barriera alveolo capillare per lo studio della attività terapeutica di nuovi approcci inalatori basati su nano-formulazioni." Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITHOUT SCHOLARSHIP	1	
ADDITIONAL POSITIONS JOINTLY SUPERVISED WITH COMPANIES	1	This position is reserved to candidates already employed by Fondazione CNAO, located in Strada Campeggi n. 53 - Pavia. The Committee will draw up specific reports and a separate ranking list.

ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	1	The "Additional positions reserved to candidates with a scholarship from a foreign country" are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for these positions. The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	9	

ADMISSION PROCEDURE: qualifications assessment and tests (written test and interview). Candidates are allowed to take the tests in English.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- a. *curriculum vitae* (up to 4 points);
- b. former periods of proven research activity at Italian or foreign scientific institutions (up to 3 points);
- c. published full papers in peer reviewed medical journals (up to 3 points).

Candidates who intend to apply for the positions with PNRR scholarship must upload a research project on the topic of the scholarship of their interest. The research topic will not be considered for assessment.

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

WRITTEN TEST: September 14, 2022, at 9:30 (CET), Aula 2 (floor 1A) – DEA – Fondazione I.R.C.C.S. Policlinico San Matteo – Strada Campeggi, Pavia.

In the written test candidates will have to address one of the topics proposed by the examining committee.

INTERVIEW: September 15, 2022, at 9:30 (CET), Aula 2 (floor 1A) – DEA – Fondazione I.R.C.C.S. Policlinico San Matteo – Strada Campeggi, Pavia.

PLEASE NOTE: Candidates who intend to apply for the scholarship to undertake research in "Short and long term outcome evaluation in a critically ill patient with severe lung failure" or for the PNRR scholarship must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up specific ranking lists.

INFORMATION: <http://phdms.unipv.eu>

The PhD course involves the following programs:

- a. Internal medicine and medical therapeutics;
- b. Experimental surgery and microsurgery.

**PhD COURSE
IN PSYCHOLOGY, NEUROSCIENCE AND DATA SCIENCE**

LOCATION: DEPARTMENT OF BRAIN AND BEHAVIORAL SCIENCES

COORDINATOR: Prof. GABRIELLA BOTTINI

RESEARCH TOPICS: Psychology, Neuroscience, Biostatistics, Public Health.

POSITIONS WITH SCHOLARSHIP	7	<p>5 scholarships funded by the University of Pavia</p> <p>1 scholarship funded by Società C.D.I. Centro Diagnostico Italiano S.p.A to undertake research in "Genetic Epidemiology"</p> <p>1 scholarship funded by the Department of Brain and Behavioral Sciences to undertake research in "ProNET - Psychosis Risk Outcomes Network".</p>
POSITIONS WITH "PNRR DM 352" SCHOLARSHIP	2	<p>1 scholarship to undertake research in "Managing Eni workers' health care by One Health approach: Artificial Intelligence algorithms based on multiple data sources", in collaboration with ENI SpA</p> <p>1 scholarship to undertake research in "The contribution of artificial intelligence to Process-Outcome Research in psychotherapy", in collaboration with Magellano.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITHOUT SCHOLARSHIP	2	
ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A	1	<p>This position is reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does</p>

SCHOLARSHIP FROM A FOREIGN COUNTRY		not provide PhD scholarships for this position.
TOTAL POSITIONS	12	

ADMISSION PROCEDURE: qualifications assessment and interview. Candidates are allowed to take the interview in English and/or via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure (see art. 5 of this Call for applications).

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- a. motivation letter in Italian or English (max 500 words) (up to 1 point);
- b. maximum of 2 reference letters issued and submitted directly by professors from the university where the degree was awarded or by other professors/researchers who have had direct contact with the applicant. During the online application, the candidate will enter the contact data of the chosen referee who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, the letter must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee (up to 1 point);
- c. research project in Italian or English (max. 3000 words), related to PhD research topics. The project's structure must be novel and original and must be written as follows: 1) general introduction about the state of the art relative to the chosen topic; 2) presentation of the research objectives; 3) description of the of materials and methodology (procedure, data analysis); 4) discussion of the expected results with evaluation of the theoretical and/or practical implications of the research project. In any case, the project will not constitute a binding work program in case of admission to the doctorate (up to 5 points);
- d. arithmetic mean of the marks obtained in the exams taken during the candidate's degree courses (up to 3 points). For students with qualifications obtained abroad, a transcript of the grades is required, showing:
 - i. the arithmetic mean of the exams obtained for each course of study;
 - ii. the minimum grade for sufficiency and the maximum grade in the university of origin.

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications. The candidates will make sure to include their curriculum vitae.

The minimum score to be admitted to the interview is 7/10.

The results of the qualifications assessment will be published online no later than **September 14, 2022**. The results will be posted on the Department of Brain and Behavioral Sciences (Psychology

section) noticeboard (Piazza Botta n. 11, Pavia) and in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: September 20, 2022, starting from 9:00 (CET), Sala Riunioni, Department of Brain and Behavioral Sciences (Psychology section), Piazza Botta n. 11, Pavia. If the interview is held in Italian, the Committee will verify the candidate's knowledge of the English language through the reading and translation of a short text taken from an essay or scientific article. The candidate will be asked to describe the content and methodology of the research project submitted, as well as the reason why he/she is willing to undertake a doctoral course. The interview will take into consideration the candidate's disciplinary orientation, in particular for what concerns the research methodology in the field of behavioural, biomedical and instrumental sciences. Candidates who are interested in the "Data Science in Biomedicine" program will be interviewed also on general topics of epidemiology and biostatistics.

Candidates who requested to take the interview via videoconference will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who intend to apply for the scholarship to undertake research in:

- "Genetic Epidemiology"
- "ProNET - Psychosis Risk Outcomes Network"
- "Managing Eni workers' health care by One Health approach: Artificial Intelligence algorithms based on multiple data sources"
- "The contribution of artificial intelligence to Process-Outcome Research in psychotherapy"

must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up specific ranking lists.

INFORMATION: phd-pnds.unipv.eu

The PhD course involves the following programs:

- a. Psychology and Neuroscience;
- b. Data Science in Biomedicine.

PhD COURSE IN BIOMEDICAL SCIENCES

LOCATION: DEPARTMENT OF BRAIN AND BEHAVIORAL SCIENCES

COORDINATOR: Prof. ANTONIO PISANI

RESEARCH TOPICS:

BIOCHEMISTRY TRACK:

Biochemical and immunological characterization of bacterial proteins, their role in infective process and possible vaccinal use.

Molecular bases of diseases associated to aging and amyloidosis; analysis of connective matrix in normal and pathological conditions; proteins of biomedical interest: functional and structural studies.

Generation and characterization of animal models of human diseases: basic to translational research

Biochemistry of human erythrocyte. Pathogenic mechanisms of diseases related to protein-misfolding: biochemical markers.

Biochemical mechanisms of platelet production.

Identification of new biomarkers in biological fluids from patients affected by severe lung disorders and rare neurodegenerative diseases; analysis of bronchoalveolar lavage fluids from COVID-19 and chronic airways disease patients to investigate the role of proteases and associated inhibitors in extracellular matrix degradation.

Elucidation of the molecular mechanism of amyloid fibrils formation in vivo and in experimental models of the disease. Investigation of structure, folding/misfolding dynamics of amyloidogenic proteins. Mechanism of toxicity of amyloid fibrils in vivo.

PHARMACOLOGY TRACK:

Receptor pathology, metabolism and cell kinetic study; environmental toxicology; gastrointestinal pharmacology; clinical pharmacology of active drugs on the central nervous system.

Antineoplastic drugs pharmacology; transplant pharmacology; pharmacoepidemiology and pharmacoeconomics of active drugs on the central nervous system, the cardiovascular system and gastrointestinal system.

Pharmacology and molecular mechanisms associated with neurodegenerative diseases, such as neuroinflammation; single-cell -omics and nanotechnology for precision medicine applications.

Environmental effects on the immune system; pharmacology of the signaling transduction systems in the neurologic, oncologic and immune system diseases.

Neurobiology and behavioral pharmacology of neurodevelopmental disorders.

PHYSIOLOGY TRACK:

Molecular and cellular physiology of the nervous system; cellular communication and plasticity in the cerebral circuits; physiology and biophysics of sensory, motor and cognitive functions; mathematical model of cells, circuits and brain; cellular communication in the cardiovascular system; physiology of the skeletal and cardiac muscles; physiology of the gastrointestinal system.

NEUROSCIENCE TRACK:

Neurodegenerative diseases; neuroimmunology; neuro-oncology; epilepsy and sleep; primary headaches; neurorehabilitation; experimental models of neurological diseases; neuroepidemiology and research methodology; neuroendocrinology and functional neurology; pediatric neuroscience.

MEDICINE TRACK:

Disciplines within the medical sciences (cardiology, hematology, pathology, pediatrics); translational fundamental and clinical research on human diseases.

Cardiology: molecular basis of inherited cardiomyopathies and arrhythmias.

Pediatrics: immunopathological bases of diseases in childhood.

Hematology: molecular basis of myeloid neoplasms and its clinical implications; recognition of the mechanisms of progression to neoplasm; integrated genomic DNA/RNA profiling of myeloid malignancies in the diagnostic setting, as well as the development of genomic classification and prognostic models.

Pathology: etiopathogenic role of viral infections and immunodeficiency-related conditions; molecular basis of extranodal lymphomas and its clinical implications; immunophenotypical characterization.

The PhD course in Biomedical Sciences is dedicated both to candidates graduated in scientific disciplines (for example Biology, Physics and Engineering) with an interest in basic and applied research to disease, and to candidates graduated in Medicine who choose the postgraduate doctoral training with the intent to acquire skills in the context of translational research. The mandatory training activity is intended to improve knowledge and skills required for understanding functional and pathological mechanisms using a multi-scale approach (molecular, cellular, systemic) and includes courses in mathematics, biophysics, computer science, physiology, biochemistry, pharmacology, pathology and therapy.

POSITIONS WITH SCHOLARSHIP	9	8 scholarships funded by the University of Pavia; 1 scholarship funded under the project "Facing Global Challenges", to undertake research in "Neuroscience"
POSITIONS WITH PNRR SCHOLARSHIP	2	1 scholarship to undertake research in "Sleep and health of the ageing society: the role of sleep in neurodegenerative diseases" 1 scholarship to undertake research in "Innovative cell culture models - Development of an ex vivo human skin culture model with extended viability". Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITH "PNRR DM 352" SCHOLARSHIP	2	1 scholarship to undertake research in "Experimental models for the study of adjuvant therapies and interventions in oncology with substances of natural origin", in collaboration with Bios-Therapy, Physiological Systems for Health S.p.A.; 1 scholarship to undertake research in "Development of



		<p>innovative health technologies", in collaboration with Paolo Gobbi Frattini Srl.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITHOUT SCHOLARSHIP	3	
ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	2	These positions are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for these positions.
TOTAL POSITIONS	18	

ADMISSION PROCEDURE: qualifications assessment and interview. Candidates are allowed to take the interview in English and/or via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure (see art. 5 of this Call for applications).

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- arithmetic mean of the scores obtained in the exams taken during the candidate's degree courses, to be calculated and declared by the candidates themselves (**up to 4 points**);
- curriculum vitae et studiorum* (**up to 2 points**);
- scientific publications (**up to 2 points**);
- research project in Italian or English (max 3000 words), related to the PhD research topics. The project must be structured according to the template available at the following link: <http://drsbm.unipv.it/admission> (**up to 2 points**).

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 6/10.

The results of the qualifications assessment will be published online no later than **September 13, 2022**. The results will be posted on the noticeboard of the Department of Brain and Behavioral Sciences and in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: September 20, 2022 at 9:00 (CET) - Department of Brain and Behavioral Sciences – Room of the former Institute of General Physiology – Via Forlanini n. 6 – Pavia.

The interview will assess the main topics covered by the PhD course and in particular the research project submitted by the candidate. The research project will not be binding if the candidate is admitted to the PhD program.

Candidates who requested to take the interview via videoconference will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who intend to apply for one of the scholarships to undertake research in:

- "Neuroscience"
- "Sleep and health of the ageing society: the role of sleep in neurodegenerative diseases"
- "Innovative cell culture models - Development of an ex vivo human skin culture model with extended viability"
- "Experimental models for the study of adjuvant therapies and interventions in oncology with substances of natural origin"
- "Development of innovative health technologies"

must express their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up specific ranking lists.

INFORMATION: <http://drsbn.unipv.it/admission>

**PhD COURSE IN
TRANSLATIONAL MEDICINE**

LOCATION: DEPARTMENT OF MOLECULAR MEDICINE

COORDINATOR: Prof. ENZA MARIA VALENTE

RESEARCH TOPICS:

“Basic research”: 1. Regulation of gene expression; 2. Structure/Function in proteins; 3. Protein homeostasis, folding and aggregation; 4. Membrane transport; 5. Mitochondrial function and dysfunction; 6. Intercellular communication; 7. Cell death; 8. Stem cells; 9. The cell biology of cancer; 10. The biology of ageing; 11. Mechanisms of immunity; 12. Gene editing and potential applications; 13. Intracellular clearance mechanisms; 14. Precision medicine.

“Clinical research”: 1. Mendelian diseases; 2. Epigenetics in health and disease; 3. Cancer genetics; 4. Signaling in development and cancer; 5. Nanomedicine; 6. Applications of next generation sequencing; 7. Host-virus relationship and antiviral therapy; 8. Immune response to pathogens; 9. Brain ageing and neurodegeneration; 10. Cardiomyopathies and heart failure; 11. Atherosclerosis and thrombosis; 12. Gastrointestinal inflammation and cancer. 13. Protein misfolding diseases; 14. Inflammation and inflammatory disorders.

POSITIONS WITH SCHOLARSHIP	9	<p>6 scholarships funded by the University of Pavia</p> <p>1 scholarship funded under the project “Facing Global Challenges” to undertake research in “Personalised Medicine”</p> <p>1 scholarship funded by the Department of Molecular Medicine, to undertake research in “Unravelling the code of mitochondrial-nuclear communication”</p> <p>1 scholarship funded by the Department of Molecular Medicine, to undertake research in “Functional characterization of genes implicated in neurodevelopmental disorders by means of patient-derived cell models”</p>
POSITIONS WITH PNRR SCHOLARSHIP	2	<p>1 scholarship to undertake research in “Use of induced pluripotent stem cells to study ion channel heart diseases”</p> <p>1 scholarship to undertake research in “Development of patient-derived 2D and 3D neuronal models of neurodevelopmental diseases”.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
POSITIONS WITH “PNRR DM 352” SCHOLARSHIP	1	<p>1 scholarship to undertake research in “Development of miniaturized technologies for the research and electrophysiological validation of novel molecules and drug repositioning on ion channels and transporters involved in orphan cancer or neurodevelopmental diseases”, in collaboration with Elements srl.</p>

		Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITHOUT SCHOLARSHIP	3	
TOTAL POSITIONS	15	

ADMISSION PROCEDURE: qualifications assessment and tests (written test and interview). Candidates will take the written test either in Italian or in English; the interview will be held in English.

Candidates are allowed to take the interview via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure (see art. 5 of this Call for applications).

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- arithmetic mean of the marks obtained in the exams taken during the candidate's degree courses, to be calculated and declared by the candidates themselves (**up to 5 points**);
- curriculum vitae et studiorum* (**up to 3 points**);
- a maximum of 2 reference letters issued and submitted directly by professors from the university where the degree was awarded or by other professors/researchers who have had direct contact with the applicant. During the online application, the candidate will enter the contact data of the chosen referee who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, the letter must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee (**up to 1 point**);
- scientific publications. Only publications from the last 5 years that are congruent with the research topics of the PhD course will be considered (**up to 1 point**).

Candidates who intend to apply for the positions with PNRR scholarship must upload a research project on the topic of the scholarship of their interest. The research topic will not be considered for assessment.

Except for the reference letters, the qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

WRITTEN TEST: September 5, 2022, at 9:00 (CET), Aula “Mosca” of the Department of Molecular Medicine – Biology and Genetics section – Via Forlanini n. 14/16, Pavia.

In the written test, to be held in Italian or English language, candidates will have to address one of the topics of the PhD course, either related to basic research or clinical research areas.

The results of the written test will be published by **September 1, 2021 at 16.00 (CET)** on the website of the Department of Molecular Medicine.

INTERVIEW: September 12, 2022, at 9:30 (CET), Aula “Mosca” of the Department of Molecular Medicine – Biology and Genetics section – Via Forlanini n. 14/16, Pavia.

The interview will be held in English. It will verify and assess the candidate’s knowledge of the English language. At the choice of the candidate, the interview will concern some research topics either related to basic research or clinical research areas; it will also focus on the candidate’s education and on the research projects of his/her interest, with the purpose of verifying his/her aptitude towards research.

Candidates who requested to take the interview via videoconference will be informed by the Committee about the date and time of the interview. Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate’s failure to take the interview due to technical difficulties.

INFO: <http://molecularmedicine.unipv.it/phd-programme/>

PLEASE NOTE: Candidates who are interested in applying for the scholarship to perform research in “Personalised Medicine” must explicitly state their interest for this topic to the examining committee before the interview. These candidates’ interviews will therefore also include a discussion of the project topics. Successful candidates will be included in the general ranking and attributed a specific qualification for the above scholarship. The scholarship will be assigned to the first qualified candidate. Candidates who will renounce the scholarship will be excluded from the ranking.

Candidates who are interested in applying for the scholarship to perform research in:

- “Unravelling the code of mitochondrial-nuclear communication”
- “Functional characterization of genes implicated in neurodevelopmental disorders by means of patient-derived cell models”
- “Use of induced pluripotent stem cells to study ion channel heart diseases”
- “Development of patient-derived 2D and 3D neuronal models of neurodevelopmental diseases”
- “Development of miniaturized technologies for the research and electrophysiological validation of novel molecules and drug repositioning on ion channels and transporters involved in orphan cancer or neurodevelopmental diseases”

must explicitly state their exclusive interest for this topic to the examining committee before the interview; these candidates’ interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

MACRO-AREA OF HUMANISTIC AND SOCIAL SCIENCES

PhD COURSE IN APPLIED ECONOMICS AND MANAGEMENT (AEM)

LOCATION: DEPARTMENT OF ECONOMICS AND MANAGEMENT;

COORDINATOR: Prof. ALBERTO A. GAGGERO;

COOPERATING INSTITUTION: University of Bergamo. The PhD degree will be jointly issued by the Rector of the University of Pavia and the Rector of the University of Bergamo.

RESEARCH TOPICS: applied economics, management.

POSITIONS WITH SCHOLARSHIP	5	2 scholarships funded by the University of Pavia 3 scholarships funded by the University of Bergamo
ADDITIONAL POSITIONS WITH SCHOLARSHIP RESERVED TO CANDIDATES WHO GRADUATED ABROAD	1	Candidates applying for this position must hold a second-level degree obtained from a foreign university. The examining committee will draw up specific reports and a separate ranking list.
POSITIONS WITH PNRR SCHOLARSHIP FUNDED BY OTHER UNIVERSITY	1	1 scholarship funded by the University of Bergamo from PNRR funds, DM 351/2022, to undertake research in "Economics and Management applied to the Public Administration". Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITHOUT SCHOLARSHIP	1	

TOTAL POSITIONS	8	
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ADMISSION PROCEDURE: qualifications assessment and interview via videoconference. Candidates are allowed to take the interview in English.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 15 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- a. research project written in Italian or in English (max 2000 words) indicating the research topic chosen by the candidate. The project's structure should be as follows: general introduction about the state of the art relative to the chosen topic; presentation of the research objectives; description of the methods (procedure, data analysis); discussion of the expected results; evaluation of the theoretical and/or practical implications (**up to 3 points**);
- b. exam transcript of the master's degree (**up to 8 points**);
- c. reference letter (no more than one), sent directly by the referee (e.g. a professor from the university where the degree was awarded or by another professor/researcher who has had direct contact with the applicant). During the online application, the candidate will enter the contact data of the chosen referee who, through a specific online procedure, will have to upload the reference letter directly in the University portal by the deadline of the call. Unlike the other documents, the letter must not be uploaded by the candidate during the online application procedure. Letters uploaded by the candidate him/herself will not be evaluated by the committee (**up to 2 points**);
- d. scientific publications and preprints. The candidate may also send an abstract and indicate the DOI (Digital Object Identifier) or provide a link to a web repository. Only publications from the last 2 years that fit with the research topics of the PhD course will be considered (**up to 2 points**).

Except for the reference letter, the qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview 11/15.

The results of the assessment will be published online no later than **July 15, 2022**. The results will be posted on the Department of Economics and Management noticeboard and in the Personal Area of the candidate in the University website (https://studentonline.unipv.it/esse3/Home.do?cod_lingua=eng). This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: July 18, 2022, starting from 10:00 am (CET), via videoconference.

The research project will be discussed during the interview and is meant to verify the candidate's aptitude towards research. The research project will not be binding if the candidate is admitted to the PhD program. The interview may also deal with the contents of the PhD program.

Before starting the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to take the interview due to technical difficulties.

PLEASE NOTE: Candidates who are interested in applying for the scholarship to undertake research in "Economics and Management applied to the Public Administration" must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFORMATION: <https://sites.google.com/unipv.it/phd-aem/home-page>

PhD COURSE
IN PRIVATE LAW, ROMAN LAW AND EUROPEAN LEGAL CULTURE

LOCATION: DEPARTMENT OF LAW

COORDINATOR: Prof. VALERIO MAROTTA

RESEARCH TOPICS: Civil Law; Labour Law and Employment Relations; Intellectual Property and Unfair Competition; Roman Law; European Legal Culture.

POSITIONS WITH SCHOLARSHIP	5	<p>4 scholarships funded by the University of Pavia</p> <p>1 scholarship funded under the project "Facing Global Challenges", to undertake research in "Legal framework of complex equity firms, sustainability, interests"</p>
POSITIONS WITH "PNRR PA" SCHOLARSHIP	4	<p>1 scholarship to undertake research in "Blockchain technology and administrative action in international taxation";</p> <p>1 scholarship to undertake research in "Mediterranean Diet and Comparative Consumer Protection Profiles";</p> <p>1 scholarship to undertake research in "Innovation and work in public administration";</p> <p>1 scholarship to undertake research in "Artificial Intelligence Systems, Trade Secrets Protection and Transparency of the Public Administration Activity".</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular</p>

		scholarship: see art. 13 of this call.
POSITIONS WITH “PNRR DIGITAL AND ENVIRONMENTAL TRANSITIONS” SCHOLARSHIP	1	1 scholarship to undertake research in “Collective Prevention and Public Healthcare, between Digital Innovation and Personal Data Protection”. Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITHOUT SCHOLARSHIP	1	
ADDITIONAL POSITION RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	1	These positions are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for these positions. Students will be selected through qualifications assessment and interview in person or via videoconference. The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	12	

ADMISSION PROCEDURE: qualifications assessment, research project and tests (written test and interview). Candidates are allowed to take the tests in English, French **or Spanish**. At the choice of the candidate, the written test will focus on one of the following topics: Civil Law; Labour Law and Employment Relations; Intellectual Property and Unfair Competition; Roman Law; Legal History. During the interview, candidates will discuss the research project submitted along with the application.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English, German, French or Spanish will be assessed during the interview.

QUALIFICATIONS AND RESEARCH PROJECT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- a. arithmetic mean of the marks obtained in the exams taken during the candidate's degree courses, to be calculated and declared by the candidates themselves (**up to 4 points**);



- b. scientific publications, excluding the master's degree thesis (**up to 2 points**);
- c. other relevant qualifications (**up to 1 point**);
- d. research project written in Italian, English, **French or Spanish** (max 2000 words) indicating the research topic chosen by the candidate among those listed above. The project's structure should be as follows: general introduction about the state of the art relative to the chosen topic; presentation of the research objectives; description of the methods (procedure, data analysis); discussion of the expected results; evaluation of the theoretical and/or practical implications (**up to 3 points**).

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

WRITTEN TEST: September 6, 2022 at 10:00 (CET), Department of Law – C.so Strada Nuova n. 65, Pavia.

For the topics concerning the program in "Private Law, Labor Law and Intellectual Property", during the written test candidates will be allowed to consult codes without comments by scholars and without case law. For the topics concerning "Roman Law and European Legal Culture" candidates will be allowed to use the sources in the ancient languages (Latin or Greek): Gai Institutiones, Corpus iuris civilis, Fontes iuris Romani antejustiniani (etc.), Glossa, Corpus Iuris Canonici (etc.).

INTERVIEW: September 8, 2022 at 9:30 am (CET), Department of Law – C.so Strada Nuova n. 65, Pavia.

PLEASE NOTE: Candidates who are interested in applying for the scholarship funded under the project "Facing Global Challenges", to undertake research in

- "Legal framework of complex equity firms, sustainability, interests"
- **"Blockchain technology and administrative action in international taxation"**
- **"Mediterranean Diet and Comparative Consumer Protection Profiles"**
- **"Innovation and work in public administration"**
- **"Artificial Intelligence Systems, Trade Secrets Protection and Transparency of the Public Administration Activity"**
- **"Collective Prevention and Public Healthcare, between Digital Innovation and Personal Data Protection"**

must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFORMATION: <http://phddpdecge.unipv.eu/site/home.html>

The PhD course involves the following programs:

- a. Private Law, Labour Law and Intellectual Property;
- b. Roman Law and European Legal Culture.

**PhD COURSE
IN PUBLIC LAW, CRIMINAL AND INTERNATIONAL JUSTICE**

LOCATION: DEPARTMENT OF LAW

COORDINATOR: Prof. SERGIO SEMINARA

RESEARCH TOPICS: general theory, structure and dynamics of Italian and comparative public law; relationships between legal systems (international, European and national systems); administrative law; fundamental rights; constitutional law; citizenship and immigration law; environmental law; domestic and international criminal law; criminology; criminal procedure and enforcement; public and private international law; international organization; institutions of the European Union; judicial cooperation.

POSITIONS WITH SCHOLARSHIP	4	4 scholarships funded by the University of Pavia
POSITIONS WITH "PNRR PA" SCHOLARSHIP	1	<p>1 scholarship to undertake research in "Organization and Strategic Management of Civil Status Services from a Transnational Perspective"</p> <p>Per queste posizioni i candidati all'atto della domanda devono selezionare la categoria 982 borsa tematica.</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	2	These positions are reserved to candidates holding, at the time of the enrollment onto the PhD course, a scholarship of the same duration of a PhD course. The University of Pavia does not provide PhD scholarships for these positions. Students will be selected through qualifications assessment and interview in person or via videoconference. The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	7	

ADMISSION PROCEDURE: qualifications assessment and tests (written test and interview).

LINGUISTIC KNOWLEDGE: candidates' knowledge of English, German, French or Spanish will be verified during the interview. Foreign candidates will also have to demonstrate adequate knowledge of Italian.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- a. arithmetic mean of the marks obtained in the exams taken during the candidate's degree courses, to be calculated and declared by the candidates themselves (**up to 6 points**);
- b. scientific publications (**up to 4 points**).

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

WRITTEN TEST: **September 12, 2022 at 9:30 am (CET)**, at the **Aula G3 – Palazzo San Tommaso – Piazza del Lino n. 2, Pavia**.

During the written test candidates will be allowed to consult codes without comments by scholars and without case law.

INTERVIEW: **September 14, 2022 at 9:30 am (CET)**, at the Department of Law – Aula III – C.so Strada Nuova n. 65, Pavia.

PLEASE NOTE: Candidates who are interested in applying for the scholarship to undertake research in "Organization and Strategic Management of Civil Status Services from a Transnational Perspective" will not have to take the written test, but will have to submit a research project (max 5000 characters, including spaces and bibliography). The project's structure should be as follows: short general introduction about the state of the art relative to the chosen topic; presentation of the research's objectives; discussion of the expected results; evaluation of the theoretical and/or practical implications. The research project must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications and will not be assessed as such, but will be discussed during the interview to verify the candidates' aptitude for research. Candidates' knowledge of English will be verified during the interview. The examining committee will draw up a specific ranking list.

INFORMATION: <http://dottorati.unipv.eu/on-dip/phddpgpi/Home.html>

The PhD course involves the following programs:

- a. Public law;
- b. Criminal and international justice.

PhD COURSE IN SCIENCES OF THE LITERARY AND MUSICAL TEXT

LOCATION: DEPARTMENT OF HUMANITIES

COORDINATOR: Prof. GIUSEPPE ANTONELLI

RESEARCH TOPICS: Textual Criticism from the Middle Ages to the Present; Critical Editions of Texts and Literary Criticism from the Middle Ages to the 21st Century; History of Italian Language; History of Theatre and Cinema; Modern Foreign Languages and Literatures; Musicology.

POSITIONS WITH SCHOLARSHIP	6	<p>4 scholarships funded by the University of Pavia</p> <p>1 scholarship funded by the Department of Musicology and Beni Culturali, with PRIN 2020 funds, to undertake research in "Improvisation / composition: the double identity of European music"</p> <p>1 scholarship funded by Fondazione Maria Corti on the occasion of the centenary of the birth of Luigi Meneghello, to undertake research in "Work and figure of Luigi Meneghello".</p>
POSITIONS WITH "PNRR PA" SCHOLARSHIP	1	<p>1 scholarship to undertake research in "Performing Arts and Society of Inclusion: Cultural Welfare Theory and Practices in Support of Creative and Multidisciplinary Urban Regeneration Processes"</p> <p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.</p>
TOTAL POSITIONS	7	

ADMISSION PROCEDURE: qualifications assessment and tests (written test and interview). The tests will take place in person, if the conditions allow it. If not, the tests will take place remotely, in accordance with the protocol provided by the University of Pavia.

LINGUISTIC KNOWLEDGE: candidates' knowledge of English, French, German, Spanish or Russian will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- summary of the second-level degree thesis in Italian or English (max. 1000 words) **(up to 1 point)**;
- exams taken during the candidate's degree courses - marks and relevance to the research areas of the PhD course **(up to 1 point)**;
- research project, either in Italian or in English (max. 3000 words, bibliography not counted), related to research topics pertaining to the programs listed below. The project's structure should be as follows: general introduction about the state of the art relative to the chosen topic; presentation of the research objectives; description of the methods and the sources

the candidate intends to use; discussion of expected results (**up to 8 points**).

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

WRITTEN TEST: September 7, 2022, at 9:00 (CET). More information on the test, as well as the location, will be communicated to candidates by the Committee via email.

The written test will consist of:

1. for the Modern Philology program: discussion of philological-critical issues referred to crucial texts of Italian literature or linguistic-stylistic analysis and historical-literary commentary of a chosen text;
2. for the Modern Foreign Languages and Literatures program: discussion in the chosen language of either philological-literary or linguistic issues pertaining to authors, texts, textual genres, specific periods of the language and culture, or historical/literary/stylistic/linguistic analysis with commentary on a text;
3. for the Musicology program: historical, analytical and stylistic discussion of at least two musical pieces chosen among those from different periods and repertoires proposed by the Committee, including those relevant to ethnomusicology, popular contemporary music and media studies.

The list of candidates admitted to the interview will be published according to a procedure that will be communicated the day of the written test.

INTERVIEW: September 19, 2022, at 9:00 (CET)

The interview will be in either Italian or the foreign language chosen by the candidate among those listed above and will concern:

1. a thorough discussion of the research project;
2. the assessment of the candidate's competence related to the chosen program;
3. the assessment of the knowledge of one of the following languages: English, French, German, Spanish, Russian.

PLEASE NOTE: Candidates who are interested in applying for the scholarships to undertake research in:

- "Improvisation / composition: the double identity of European music"
- "Work and figure of Luigi Meneghello"
- "Performing Arts and Society of Inclusion: Cultural Welfare Theory and Practices in Support of Creative and Multidisciplinary Urban Regeneration Processes"

must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFORMATION: <http://phdfm.unipv.eu/site/en/home.html>

The PhD course involves the following programs:

Modern Philology

Research areas:

1. Genetic criticism and textual tradition; critical editions of texts from the origins to the 20th century;
2. History of literary criticism;
3. Theory of literature;
4. Renaissance and Modern literature and culture;
5. Italian linguistics;
6. Edition and comment of early Romance texts;
7. Drama and performance. Film language: analysis and criticism;
8. Metrical theory and analysis;
9. Reception of Greek and Latin texts in modern literatures.

Modern Foreign Languages and Literatures

Research areas:

The program covers 6 areas, interacting also on a comparative basis: English studies; Germanic philology; French studies; German studies; Spanish studies; Slavonic studies. Within these linguistic areas, the following fields are foregrounded:

1. Critical edition and analysis of Medieval Germanic texts;
2. Ancient book studies;
3. Criticism of the European novel;
4. Textual analysis and criticism (theory and practice);
5. Literary translation;
6. Language studies;
7. History of theatre and drama (script and performance).

Musicology

Research areas:

1. Critical edition of musics from the Middle Ages to the 21st century;
2. Music theories and analysis from the Middle Ages to the 21st century;
3. Musical theatre from the 17th to the 21st century;
4. Music and literature;
5. Music and media;
6. Organology and music iconography;
7. Ethnomusicology;
8. Popular music.

PHD COURSE IN HISTORY

LOCATION: DEPARTMENT OF POLITICAL AND SOCIAL SCIENCES

COORDINATOR: Prof. PIERLUIGI VALSECCHI

RESEARCH TOPICS: Pre-classical ancient Near East; Ancient history and historiography; Greek, Etruscan-Italic and Roman archaeology, topography and art; History and civilization of Greek and Latin Middle Age; Modern and Contemporary History; Constitutional and Administrative History; History and Politics of European Integration; History of Asia and Africa.

For further information on the research topics please visit the PhD course website:
<http://phdstoria.unipv.eu/site/en/home.html>

POSITIONS WITH SCHOLARSHIP	4	3 scholarships funded by the University of Pavia 1 scholarship funded under the project "Facing Global Challenges" project, research topic "Archaeology, and archaeogenomics: the keys to understanding our past"
POSITIONS WITH "PNRR PA" SCHOLARSHIP	1	1 scholarship to undertake research in "Education and training. Management and development of human resources for the Public administrations: history and comparisons". Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
POSITIONS WITH "PNRR CULTURAL HERITAGE" SCHOLARSHIP	2	1 scholarship to undertake research in "'Who Owns the Past?' Ownership of Heritage and Contested Heritage" 1 scholarship to undertake research in "Global History and Cultural Heritage Between Africa and Europe". Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 13 of this call.
ADDITIONAL POSITIONS WITH SCHOLARSHIP	2	These positions are reserved to candidates holding a second-level degree obtained abroad. The Committee will

RESERVED TO CANDIDATES WHO GRADUATED ABROAD		draw up specific reports and a separate ranking list.
ADDITIONAL POSITIONS RESERVED TO CANDIDATES WITH A SCHOLARSHIP FROM A FOREIGN COUNTRY	1	This position is reserved to candidates holding, at the time of the enrolment onto the PhD course, a scholarship of the same duration as a PhD course. The University of Pavia does not provide PhD scholarships for such positions. The Committee will draw up specific reports and a separate ranking list.
TOTAL POSITIONS	10	

PhD students will be required to spend a research period abroad of at least 12 months over the three years.

ADMISSION PROCEDURE: qualifications assessment and interview via videoconference. Candidates are allowed to take the interview in English.

Candidates who are abroad at the time of the interview can take the interview via videoconference. The videoconference must be requested by selecting the appropriate option in the online application procedure (see art. 5 of this Call for applications). Candidates under medical quarantine at the time of the interview can request to be interviewed via videoconference by sending an e-mail to dottorato.storia@unipv.it.

LINGUISTIC KNOWLEDGE: the candidates' knowledge of English will be verified during the interview.

QUALIFICATIONS ASSESSMENT: UP TO 10 POINTS ARE ASSIGNED UPON ASSESSMENT OF EACH CANDIDATE'S QUALIFICATIONS, AS FOLLOWS:

- exams taken during the candidate's degree courses, including the marks (**up to 2 points**);
- post lauream diplomas (specialization schools, Italian Master courses); participation in archaeological excavation campaigns in a supervisory position; collaborations with libraries/museums/archives, with medium-high responsibilities; proven training period abroad; possible additional work or research activities at qualified institutions (subject to the approval of the committee). All the above-mentioned activities must be confirmed by uploading of the relevant dated certificates issued by the management (**up to 1 point**);
- publications (only if already published or accepted for publication; a pdf file, as well as full information pertaining to the publisher, must be provided); conference reports already accepted for publication (a certificate issued by the editor or the conference organizer must be provided). In order to be considered, publications and conference reports must be less than 5 years old and must be congruent with the research topics of the PhD course (**up to 2 points**);

- d. research project in Italian or English (max 16000 characters, including spaces; bibliography, sources and figures not counted), related to one of the above-mentioned PhD research fields. The research project is to be structured as follows: short literature review; presentation of the research project and its goals; discussion of the expected outcomes (this must specify the project's likely contribution to the disciplinary field/s concerned); provisional research plan and timeframe (**up to 5 points**).

Candidates must enclose their *curriculum vitae* to the application together with the above-listed qualifications.

The qualifications must be submitted according to the procedure indicated in art. 5, para. 2 of this call for applications.

The minimum score to be admitted to the interview is 6/10.

The results of the qualifications assessment will be announced no later than **July 14, 2022**. The results will be posted in the Personal Area of the candidate in the University website. This can be accessed using the login information provided at the end of the registration procedure.

INTERVIEW: July 26, 2022, starting from 10:00 am (CET). The location will be announced later.

The interview will be held in Italian or English and will verify the candidate's knowledge of the English language. The interview will focus on the research project in order to ascertain the candidate's aptitude towards research and his/her expertise and background in the research project's field of studies. The research project will not be binding if the candidate is admitted onto the PhD course.

Before the interview, candidates will be asked to show a valid identity document. The University of Pavia does not take any responsibility for a candidate's failure to attend the interview due to technical difficulties.

PLEASE NOTE: Candidates who are interested in applying for the scholarship to undertake research in:

- "Archaeology, and archaeogenomics: the keys to understanding our past"
- "Education and training. Management and development of human resources for the Public administrations: history and comparisons"
- ""Who Owns the Past?" Ownership of Heritage and Contested Heritage"
- "Global History and Cultural Heritage Between Africa and Europe"

must state their interest to the examining committee before the interview; these candidates' interviews will therefore also include a discussion of the project topics. The examining committee will draw up a specific ranking list.

INFORMATION: <http://phdstoria.unipv.eu/site/home.html>