







### SUBJECT: Public competition for admission to PhD courses – 38th cycle – third part - 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 - third part, administered by the

University of Pavia

#### **DECREES**









#### Art. 1 Activation

The University of Pavia hereby announces public competitions for admission to the 38<sup>th</sup> cycle

 third part (academic year 2022/2023) of PhD courses, listed below according to their macroareas:

	MACRO-AREA OF SCIENCE AND TECHNOLOGY				
1	BIOENGINEERING, BIOINFORMATICS AND HEALTH TECHNOLOGIES				
2	COMPUTATIONAL MATHEMATICS AND DECISION SCIENCES				
3	PHYSICS				
4	ELECTRONICS, COMPUTER SCIENCE AND ELECTRICAL ENGINEERING				
5	CHEMICAL AND PHARMACEUTICAL SCIENCES, AND RELATED INDUSTRIAL INNOVATION				
6	EARTH AND ENVIRONMENTAL SCIENCES				
	MACRO-AREA OF LIFE SCIENCE				
7	GENETICS, MOLECULAR AND CELLULAR BIOLOGY				
8	PSYCHOLOGY, NEUROSCIENCE AND DATA SCIENCE				
9	BIOMEDICAL SCIENCES				
10	TRANSLATIONAL MEDICINE				

2. In Annex 1 (p. 17 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 February 1, 2023.
- 3. The number of PhD positions mentioned in Annex 1 (p. 17 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.
- 4. The funding provided by external entities will be assigned provided an agreement is reached between the University and the entity involved. The PNRR funding will be assigned provided the publication of the assignment decrees by the Ministry of University and Research.
- 5. 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 <a href="http://phd.unipv.it/website.">http://phd.unipv.it/website.</a>
- 6. 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. 17 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. <u>in case of italian and EU citizens:</u> 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 February 28, 2023. 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. <u>in case of degree attained in Italy:</u> a self-declaration, conforming to the model available at <a href="http://phd.unipv.it/call-38-ter/">http://phd.unipv.it/call-38-ter/</a>, testifying they have attained the degree, together with copy of a valid identity document;
  - ii. in case of degree attained abroad:
    - in case of italian or EU citizens: a self-declaration, conforming to the model available at <a href="http://phd.unipv.it/call-38-ter/">http://phd.unipv.it/call-38-ter/</a>, testifying they have attained the degree, together with copy of a valid identity document;
    - 2. <u>in case of non-EU citizens:</u> 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 formalized, within a deadline communicated by the relevant university office, specifying, among other things, the conditions and nature of the research to be carried out at the company, institute or public research center 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 <u>December 22, 2022 at 12:00 (CET)</u>. <u>Applications can only be made via the online procedure in the candidates' Personal Area</u> at the following link: <a href="https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng">https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng</a>.
  - 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 <u>pay the application fee</u>, amounting to € 35.00, <u>by December 22, 2022 (CET)</u>. <u>Failure to pay the admission fee by the deadline will result in candidates being excluded from the competition.</u> 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 <a href="https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng">https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng</a> 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. 17 ff.). The referee/s will receive a request via e-mail, with a link for the upload of the reference letter in the platform;
- attach, via an upload, proof of the qualifications required for their chosen PhD competition (see Annex 1, p. 17 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 <a href="http://phd.unipv.it/call-38-ter/">http://phd.unipv.it/call-38-ter/</a> 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 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

<sup>&</sup>lt;sup>1</sup> 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.









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: 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. 17 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 <a href="https://saisd.unipv.it/index.php/en/contacts/">https://saisd.unipv.it/index.php/en/contacts/</a>);
- e-mail to <u>disabili@unipv.it</u>, 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 (December 22, 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. 17 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 December 22, 2022 at 12.00 (CET) 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 <a href="mailto:concorso-dottorati@unipv.it">concorso-dottorati@unipv.it</a> 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 <a href="http://phd.unipv.it/bando-38-ter/">http://phd.unipv.it/bando-38-ter/</a> 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).
- Candidates who wish to enjoy these benefits (scholarships, accommodation, reduced meal
  prices at canteens etc.) must consult the <a href="http://www.edisu.pv.it/">http://www.edisu.pv.it/</a> 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 <a href="http://phd.unipv.it/call-38-ter/">http://phd.unipv.it/call-38-ter/</a> 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. 17 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.

- 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 ity.
- 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. 17 ff.), is equivalent to a notification to applicants. Possible modifications in the dates and locations of the tests will be announced on the <a href="http://phd.unipv.it/call-38-ter/">http://phd.unipv.it/call-38-ter/</a> website. Candidates will not receive any further communication from the University administration office. Should a situation of emergency occur, 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 <a href="http://phd.unipv.it/call-38-ter/">http://phd.unipv.it/call-38-ter/</a> 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

- 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

- The ranking lists will be published on the University's official noticeboard <a href="http://www-5.unipv.it/alboufficiale/">http://www-5.unipv.it/alboufficiale/</a> and on the <a href="https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng">https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng</a> 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 <a href="http://phd.unipv.it/call-38-ter/">http://phd.unipv.it/call-38-ter/</a>.
- 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 deadline of February 28, 2023 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 (<a href="https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng">https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng</a>) 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 (<a href="https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng">https://studentionline.unipv.it/esse3/Home.do?cod\_lingua=eng</a>) 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 17 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.

### 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: <a href="https://web.unipv.it/ateneo/statuto-regolamenti/">https://web.unipv.it/ateneo/statuto-regolamenti/</a>.

### Art. 18 Final exam and attainment of the PhD degree

- 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









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 concorsodottorati@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

ANNEX 1

#### 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









EXECUTIVE POSITIONS (Cat. 974)	1	1 position reserved to Engenome srl employees
TOTAL POSITIONS	1	

#### 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:

- a. motivation letter in Italian or English language (max 500 words) (up to 1 point);
- b. 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);
- c. exams taken during the candidate's degree courses, bearing the mark (up to 6 points);
- d. scientific publications (up to 1 point);
- e. 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 **January 13**, **2023**. 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: January 19, 2023, at 9:00 (CET),** "Aula Verde" 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.

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 <a href="http://compmat.unipv.it/">http://compmat.unipv.it/</a>. For details about research at the University of Pavia, see <a href="http://matematica.unipv.it/">http://matematica.unipv.it/</a>, for details about research at USI Institute of Computational Sciences see <a href="https://www.ics.usi.ch">https://www.ics.usi.ch</a>.

POSITIONS WITH SCHOLARSHIP (cat. 982)	1	1 scholarship funded by the Department of Mathematics (Funds PNRR "Centro Nazionale di Ricerca in High Performance Computing, Big Data and Quantum Computing") to undertake research in "High Performance Computing and Deep Learning methods for protein evolution and design"
TOTAL POSITIONS	1	

**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. 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**;
- b. exams taken during the candidate's master's degree course: up to 4 points;
- c. 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**;

- d. 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 **January 9, 2023**. 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: January 16, 2023 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.

INFORMATION: <a href="http://compmat.unipv.it/">http://compmat.unipv.it/</a>

#### **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.









#### IN PHYSICS

**LOCATION: DEPARTMENT OF PHYSICS** 

**COORDINATOR:** Prof. DANIELA MARCELLA REBUZZI

POSITIONS WITH SCHOLARSHIP (Cat. 982)	5	1 scholarship funded by the University of Pavia; 4 scholarships funded by the Department of Physics (Prof Marco Liscidini's funds – "Fondi Partenariato Esteso in Scienze e Tecnologie Quantistiche"), to undertake research in "Theoretical and/or experimental studies on quantum sciences and quantum technologies".
TOTAL POSITIONS	5	

**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:

- a. exams taken during the candidate's degree courses, bearing the marks (up to 4 points);
- b. 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);
- c. 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);
- d. 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).

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 **January 10**, **2023**. 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: January 16, 2023 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.

**PLEASE NOTE**: Candidates must state their interest for a research 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 specific ranking lists.

**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

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

POSITIONS WITH SCHOLARSHIP (Cat. 982)	3	1 scholarship funded by the Department of Electrical, Computer and Biomedical Engineering (Project "NODES Ecosistemi dell'Innovazione - Spoke 6 Fondi PNRR Missione 4 - Componente 2"), to undertake research in "Sustainable services for agricultural areas: renewable energy communities and microgrids";  1 scholarship funded by the Department of Electrical, Computer and Biomedical Engineering (Project NODES Ecosistemi dell'Innovazione - Spoke 6 Fondi PNRR Missione 4 - Componente 2 "Dalla Ricerca all'Impresa" ("M4C2"), CUP F17G22000190007) to undertake research in "Development of mid-IR sources and tools for sensing and food applications";  1 scholarship funded by the Department of Electrical, Computer and Biomedical Engineering (Project PNRR Partenariato Esteso Quantum Technologies), to undertake research in "Data pattern extraction and analysis for quantum imaging and quantum sensing applications".
TOTAL POSITIONS	3	

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. two 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).

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 **January 15**, **2023**. 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: January 21, 2023, 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.

#### **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 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 metalloenzymes; 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 (Cat. 982)	3	1 scholarship funded by the Department of Drug Sciences (Prof. Chiara Milanese's funds - funds NODES "Innovation Ecosystem") to undertake research in "Development of photoactive materials for environmental and energetic applications.";
		1 scholarship funded by the Department of Drug Sciences (Prof. Adele Papetti's funds - funds PNRR_PR-10 - ON Foods - Research and innovation network on food and nutrition Sustainability, Safety and Security - Working On Foods ) to undertake research in "Food sustainability and safety of traditional and novel foods";
		1 scholarship funded by the Department of Drug Sciences (Prof. Giuseppina Sandri's funds – funds PNRR_PR-10 – ON Foods), to undertake research in "Food sustainability and safety of traditional and novel foods: technological aspect".
TOTAL POSITIONS	3	

**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:

- 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 **January 10**, **2023**. 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:** January 13, 2023, at 10:00 (CET), at the Department of Chemistry – Aula CA1 (General Section) – Viale Taramelli n. 12 – Pavia, or via videoconference according to the information provided by the Committee. The room will be communicated later on.

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 must state their interest for a research 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 specific ranking lists.

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. RICCARDO TRIBUZIO;









POSITIONS WITH SCHOLARSHIP (Cat. 982)	2	1 scholarship funded by ENI s.p.a., to undertake research in "Geochemistry and CCS: from experimental data to reactive transport numerical models"; 1 scholarship funded in the framework of the project "Facing Global Challenges", to undertake research in "Models and technologies to monitor and predict Earth's crust movements".
TOTAL POSITIONS	2	

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:

- 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.

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

The results of the qualifications assessment will be announced no later than **January 10, 2023**. 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: January 16, 2023, 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: <a href="http://phd-dsta.unipv.it/">http://phd-dsta.unipv.it/</a>.

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 must state their interest for a research 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 specific ranking lists.

INFO: <a href="http://phd-dsta.unipv.it">http://phd-dsta.unipv.it</a>

#### **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

POSITIONS WITH SCHOLARSHIP (Cat. 982)	3	1 scholarship funded by the Department of Molecular Medicine (Prof. Silvia G Priori's funds – funds "CN3 - Centro Nazionale sullo sviluppo di terapia genica e farmaci con tecnologia a RNA è CN00000041- Spoke 4 – CUP F13C22000700007"), to undertake research in ""Comparison of trascriptomic and proteomic profiles before and after RNA therapies delivered by nanoparticles or AAV9 in genetically modified mices";
		1 scholarship funded by the Department of Biology and Biotechnology (Prof Francesco Lescai's funds – funds PNRR CN1-HPC-Spoke8), to undertake research in









		"Genome Bioinformatics for in-silico Medicine and Omics data";
		1 scholarship funded by the Department of Clinical-Surgical, Diagnostic and Pediatric Sciences (Prof. Fausto Baldanti's funds – funds "Partenariato Esteso PE.13 titolo: ONE HEALTH BASIC AND TRANSLATIONAL RESEARCH ACTIONS INF ACT) to undertake research in "Molecular epidemiology of emerging and re-emerging infectious pathogens and development of phylogenomic and phylogeographic diffusion models".
TOTAL POSITIONS	3	

**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. 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);
- b. 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**);
- c. 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**);
- d. research project (up to 5000 characters, spaces included), in Italian or English language, which will not, in any way, be binding if the candidate is admitted onto the PhD course (up









#### to 4 points).

The qualifications must be submitted according to the procedure described 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 **January 10, 2023**. 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: January 16, 2023, at 10:30 (CET),** Aula "Arturo Falaschi" of the CNR Institute of Molecular Genetics "Luigi Luca Cavalli Sforza" - Via Ferrata n. 1 – Pavia.

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://phdsqb.unipv.eu/site/en/home/admission-procedures.html

### 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	6	1 scholarship funded by the Department of Brain and Behavioral Sciences (Prof. Egidio D'Angelo's funds - funds PE12_MNESYS_PNRR – U.A. 14.01) to undertake research in "Experimental exploration of the cognitive and sensorimotor neural system";
		1 scholarship funded by the Department of Brain and Behavioral Sciences (Prof. Egidio D'Angelo's funds - funds PE12_MNESYS_PNRR – U.A. 14.01), to undertake research in "Psychopharmacological stratification in mood and psychotic disorders";
		1 scholarship funded by the Department of Brain and Behavioral Sciences (Prof. Egidio D'Angelo's funds – funds









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. 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 **January 10**, **2023**. 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: January 13, 2023, starting from 9:00 (CET), via videoconference. 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 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 must state their interest for a research 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 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

POSITIONS WITH SCHOLARSHIP (Cat. 982)	1	1 scholarship funded by the Department of Brain and Behavioral Sciences (Prof. Egidio D'Angelo's funds - funds PE12_MNESYS_PNRR - U.A. 14.01), to undertake research in "Biomarkers of neurodegeneration".
TOTAL POSITIONS	1	

**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. 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);
- b. curriculum vitae et studiorum (up to 2 points);
- c. scientific publications (up to 2 points);
- d. 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: <a href="http://drsbm.unipv.it/admission">http://drsbm.unipv.it/admission</a> (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 **January 10**, **2023**. 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: January 17, 2023 at 10:00 (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.

INFORMATION: <a href="http://drsbm.unipv.it/admission">http://drsbm.unipv.it/admission</a>

### 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 (cat. 982)	3	1 scholarship funded by the Department of Molecular Medicine (Prof. Di Buduo's funds - CARIPLO 2017-0920 / Prof. Di Buduo e Balduini's funds - EHA RG-202012-00212 and Horizon Europe EIC Transition SilkPlatelet), to undertake research in "Models of megakaryopoiesis in physiology and pathology"
		1 scholarship funded by the Department of Molecular Medicine (Prof. Balduini's funds MOAB CRACKIT and Horizon Europe EIC Transition SilkPlatelet / Prof. Di Buduo's funds Cariplo 2017- 0920), to undertake research in "3D models of bone marrow for ex vivo platelet production";
		1 scholarship funded by the Department of Internal Medicine and Medical Therapeutics (Prof. Antonio Di Sabatino's funds / funds PE.10 - ON FOODS - RESEARCH AND INNOVATION NETWORK ON FOOD AND NUTRITION SUSTAINABILITY, SAFETY AND SECURITY WORKING ON FOODS; CUP: F13C22001210007), to undertake research in "Nutritional aspects of inflammatory bowel disease".
TOTAL POSITIONS	3	

ADMISSION PROCEDURE: qualifications assessment and interview.









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:

- 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. curriculum vitae et studiorum (up to 3 points);
- 3. 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);
- 4. 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).

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 5/10.

The results of the qualifications assessment will be published online no later than **January 10**, **2023**. 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: January 16, 2023, 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/