

**Doctoral  
Programme in  
Bioinformàtica /  
Bioinformatics  
(interuniversity:  
UAB, UB, UdG,  
UdL, UVic-UCC,  
UPC, URV, UOC)**

# Doctoral Programme in Bioinformàtica / Bioinformatics (interuniversity: UAB, UB, UdG, UdL, UVic-UCC, UPC, URV, UOC)

**Start**  
18 Sep 2025

**Online**  
100%

**Admission:** March 5, 2024

**Languages:** English

**Official qualification**

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## Presentation

Given that any researcher in the fields of Life Sciences or Health is nowadays a user of Bioinformatics, the intention of this Doctoral Programme in Bioinformatics is to train students to be outstanding researchers who can contribute new methods, knowledge and tools for both present and future users of Bioinformatics.

This high-level training in Bioinformatics research opens up a wide range of career options for students, as well as academic opportunities. There is currently an ever-growing demand for professionals with this level of training, coming from hospitals and the pharmaceutical, biotech and agro-food industries. Companies in these sectors are generally highly active in terms of their RD&I, this being essential if they wish to maintain or improve their competitive position. The explosion in the biological data handled by hospitals and businesses (the big data paradigm) and the need to develop procedures to correctly interpret these data (in the context of an institution's specific objectives) are the main factors behind this growing demand for people highly trained in Bioinformatics.

## Official qualification

The UOC's Doctoral Programme of Bioinformatics (interuniversity: UAB, UPC, UdG, UdL, UOC, UVic-UCC, UB and URV) is a programme that has been approved by the Spanish Universities Council, and its implementation has been authorized by the Government of Catalonia, in accordance with current legislation.

The UOC's doctoral programmes have full academic validity throughout Spain; where such is the intention, they are qualifications to perform regulated professions, in accordance with the regulations applicable in each case.

The certificates for these programmes are issued together with a Diploma Supplement (DS), providing details of what the student studied, their results, the professional competencies obtained and the qualification's level in the Spanish higher education system; the aim of this is to facilitate recognition of the qualification and promote students' and graduates' mobility within the European Higher Education Area (EHEA).

In other countries, the validity of the official university qualifications issued by the UOC will depend on each specific country's education laws.

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### Programme quality

The quality of this degree programme is endorsed by the Catalan University Quality Assurance Agency (AQU), which ensures that rigorous standards, including those demanded by the EHEA, are met.

### AQU quality seal

Catalan University Quality Assurance Agency



AQU Catalunya registered on EQAR

### Together with:



**UNIVERSITAT ROVIRA I VIRGILI**



**UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH**



**UNIVERSITAT DE VIC UNIVERSITAT CENTRAL DE CATALUNYA**



# Programme of study

## Study plan

Depending on what studies the doctoral student has already completed, and whether or not they have obtained initiation to research credits in an official postgraduate course, it may be deemed appropriate for them to take bridging courses. These bridging courses are made up of courses already existing in the University's official postgraduate programmes. In the event a doctoral student is assigned bridging courses as part of their study plan, they shall have to take these courses and pass them during their first academic year.

Formative activities:

### **Competencies development aimed at communication and dissemination of research**

Basic level. (OBLIGATORY)

No. of hours: 36

Every year, each of the Programme's Selection and Monitoring Committees organize follow-up workshops, holding sessions to meet with all the doctoral students who started together in the same year. These workshops shall also be used to develop students' competencies in relation to how they communicate their research, something that will be the object of special attention during the presentations.

The workshops will be held at one of the participating universities, on a rotational basis, meaning students shall have to travel. In some cases where justification is provided (eg stays or residence abroad), the doctoral student may have the option of engaging in the follow-up activity by video conference. However, during the thesis it is obligatory to perform at least one follow-up session in person.

### **Attending working doctoral groups**

(OBLIGATORY)

No. of hours: 48

Every year, the doctoral programme organizes a scientific workshop lasting one day. Each doctoral student must participate in at least two of these workshops, and must present a poster. The objective of the workshops is to expound the state of thesis project research processes in their initial, central and final stages, presenting works and sharing them for discussion. The sessions are always organized in 3 levels:

INITIAL: Conceptual starting points and complete research plan

CENTRAL: Methodologies used and methodological problems needing solving

FINAL: Expected results and results already obtained

The workshops will follow a standard format, with oral presentations and two sessions (morning and afternoon) for posters. The language for the workshop will be that of the Programme (English). In advance, doctoral students must send a summary to the Academic Committee, from which talks lasting 20 minutes (plus 10 minutes discussion) will be selected for each of the 3 levels mentioned.

This is an activity that allows for the sharing of students' experiences at three crucial moments in the development of their studies, and provides those running the programme with a clear idea about the evolution of each student's  $\lambda$  its direction, its level, and the pace at which the research is progressing.

The workshops will be held at one of the participating universities, on a rotational basis, meaning students shall have to travel. The exception to this is international online students, whose participation in the workshops can also be online.

### **Attending seminars or conferences given by experts from the same field**

(OBLIGATORY)

No. of hours: 9

The Doctoral Programme organizes a series of scientific seminars, which take place about once every 2 months (4 seminars per academic year). The goal is to improve students' knowledge on subject areas related to their research for their doctoral thesis. Each doctoral student must attend at least 3 of these seminars per academic year, over the course of 3 academic years. The seminars will be led by internationally respected researchers, and will focus on the topics covered by the Programme.

The sessions will be held at one of the participating universities, meaning students shall have to travel. The exception to this is international online students, whose participation in the seminars can also be online.

### **Making a presentation (oral or a poster) at a national or international conference**

(OBLIGATORY)

No. of hours: 100

Presentation and discussion of the research you have carried out, in front of an audience who are well-versed in the topic in question, can be one of the best ways of learning about and improving your research work. As such, the context of an international conference dedicated specifically to the subject area in which a doctoral student is developing their thesis, attended by researchers who are well-respected in their field, represents an essential test in the completion of the future researcher's training.

The doctoral programme therefore proposes that students participate in an scientific event such as an international conference or workshop, where they can present the results of their research and receive comments or criticisms from specialist researchers of renown in their field, while also participating in discussions and commenting/reflecting on the main questions in their subject area.

The nature of this task requires that their work be at a well-defined stage, so students will need to have reached an advanced stage in their thesis. This activity will be supervised and guided by the thesis tutor or director.

### **Production of a research paper, sent to an impactful journal**

(OBLIGATORY)

No. of hours: 500

The student's most significant results are to be presented in the form of a scientific paper.

As part of the production of a doctoral thesis and as a key element in the training and development of future researchers, it is particularly important to devote special attention to the capacity of doctoral degree programme students to optimally develop their scientific work, in both its form and its content, in alignment with the

international research community. It is therefore essential that they understand the means, mechanisms, tools, presentation strategies, formal strategies, and standard requirements for the publication of a research paper in an indexed journal.

Given that papers are very often the number one instrument used in research today, it is considered to be of paramount importance that, before obtaining their doctoral degree, students have the experience of writing at least one scientific paper for publication in an indexed journal.

This activity is to be performed as the student is arriving towards the completion of their experimental work, when they have obtained results that can steer their scientific publication.

#### **Research stays in national or foreign centers, public or private (OPTIONAL)**

In order to obtain the International Doctoral Research Component, during the period of training necessary to obtain the title of doctor, a minimum stay of three months must be made outside the Spanish State in a prestigious higher education institution or research center, in that they have studied or done research. The stay and activities must be endorsed by the thesis supervisor and authorized by the academic committee, and must be incorporated into the document of activities of the PhD student. This stay can be fragmented, provided that the total time is equal to or greater than three months, but must have been done in the same institution. The training period is considered from admission to the PhD programme. The Programme will encourage these international stays, so that even if they are optional, they will be carried out by a majority of PhD students.

## **Research, transfer and entrepreneurship courses**

The UOC also offers research, transfer and entrepreneurship courses in English aimed at **students, researchers** and faculty to foster **research in scientific, academic and business fields**.

Research, transfer and entrepreneurship courses can be recognized as free elective credits on bachelor's degree courses. If you are studying a doctoral degree at any university and have obtained a competitive grant, you can also study it as part of your training resources.

You can check all the courses in the website: <https://estudios.uoc.edu/en/doctoral-programmes>

The maximum duration of studies will be three years for full-time students and five years for part-time students, counted from the date of admission to the programme until the doctoral thesis is presented. This period does not include maternity or paternity leave, or any long-term sick leave deemed necessary by the Academic Committee.

The Academic Committee may authorize the extension of these periods, subject to the legally stipulated maximum periods, in specific circumstances defined for each doctoral programme.

After enrolling in the programme, each doctoral student will be given a personalized activity document. This document specifies all the activities set by the Academic Committee for the doctoral student's development.

By the end of the first year, doctoral students must write a research plan that includes the methodology to be used and objectives to be pursued, as well as the means and timetable for completing the thesis.

The Academic Committee will conduct an annual assessment of each doctoral student's research plan and activity document, which will be considered together with reports from the tutor and thesis supervisor. This research plan must receive a positive assessment for the doctoral student to continue in the programme.

Over the course of the programme, each doctoral student must successfully complete the specific training activity (basic, thematic and methodological seminars) stipulated in his/her personalized pathway. In the first year of the programme, doctoral students must also write a research plan and have it approved.

## **Activities in face-to-face teaching mode**

### **Activities in the organized research period in face-to-face teaching mode**

## **Activities in distance teaching mode**

### **Activities in the organized research period in distance teaching mode**



**Research lines**

# Academic team

## Doctoral School Management

David Masip Rodó

## Programme director

Ferran Prados Carrasco

## Supervisors

Anna Bach Faig

Carles Ventura Royo

Daniel Riera Terrén

David Masip Rodó

Ferran Prados Carrasco

Jordi Casas Roma

Josep Jorba Esteve

Àgata Lapedriza Garcia

## Tutor

Elisenda Bonet Carne

## 25 years' experience in e-learning

In 1995 the UOC was launched as the world's **first fully online university**. More than 25 years later, we are still pioneers in digital education.

Our **eLearning Innovation Center** oversees the evolution of our educational model, to ensure unique, high-quality, connected and networked learning experiences.

# Call for applications

## General requirements

For admission to this doctoral programme, candidates must meet the general requirements set by the University as well as the specific requirements of the programme.

First, they must prove the meet one of the following requirements:

- They hold an official Spanish bachelor's degree, or equivalent, and university master's degree, or equivalent, and have passed at least 300 ECTS credits in these two degrees.
- They hold an official Spanish university degree, corresponding to previous university education systems, and have passed a minimum of 300 ECTS credits in these official university studies, of which at least 60 must correspond to a master's degree.
- They hold an official university degree from a country included in the European Higher Education Area (EHEA) that gives entitlement to admission to official master's degree courses, and have passed a minimum of 300 ECTS credits in these official university studies, of which at least 60 must correspond to a master's degree.
- They hold an official Spanish bachelor's degree whose duration, pursuant to EU regulations, is at least 300 ECTS credits. In this case, the student must obligatorily take the specific bridging courses, unless the corresponding doctoral programme includes research training credits, equivalent in formative value to the research credits from master's degree courses.
- They hold an official university degree and, subject to prior obtainment of a training place in the appropriate entrance examination for specialized health training places, have completed with a favourable assessment at least two years of training in a programme to obtain the official qualification for any of the Health Sciences specializations.
- They hold an official university degree from a non-EHEA country, without need for official recognition, subject to verification that the level of training is equivalent to that of an official Spanish university master's degree and gives entitlement to admission to doctoral studies in the country awarding the degree.
- They hold a Spanish doctorate obtained in accordance with previous university systems.
- Pre-EHEA graduates, architects or engineers who also hold the advanced studies diploma (DEA), obtained in accordance with the provisions of Royal Decree 778/1998, of 30 April, or have achieved the research proficiency regulated in Royal Decree 185/1985, of 23 January.
- They hold an official university degree that has obtained the equivalent of level 3 in the Spanish Qualification Framework for Higher Education (MECES), in accordance with the procedure set forth in Royal Decree 967/2014, of 21 November, establishing the requirements and procedure for the official recognition and declaration of equivalence for qualifications and at official university academic level and for the validation of foreign higher education studies, and the procedure for determining the correspondence with the levels of the MECES of the official qualifications of architect, engineer, pre-EHEA graduate, foundation degree holder or diploma holder.

If the candidate has not passed the credits required for admission to a university master's degree, they shall have to take the bridging

courses that are specified by the Programme.

If the candidate holds only an official university bachelor's degree whose duration, pursuant to EU regulations, is 300 ECTS credits or they have not passed the credits required for admission to a university master's degree, permission to continue the doctoral programme is conditional upon passing the bridging courses that correspond to the module, study plan or initiation to research courses in the corresponding learning period.

Students must have appropriate knowledge for the concepts and basic tools used when carrying out competitive research in the field of bioinformatics. As such, the main and prioritised path for access to this Programme is completion of a master's degree focusing on research into one of the disciplines that make up the interdisciplinary field of bioinformatics.

The only alternative path is for for students who have not completed a master's degree but have completed a bachelor's degree of 300 ECTS credits or more (not including research credits) in one of the disciplines that make up the interdisciplinary field of bioinformatics, who may access the Programme on the condition of taking 30 ECTS credits of a master's degree in Bioinformatics taught at one of the universities jointly responsible for the Programme (see section 3.4), during their first year.

The Programme's vehicular language is English, thus another access requirement is to demonstrate a level of English equivalent to level B2 or upper intermediate independent user under the Common European Framework of Reference for Languages. For candidates with no accreditation of their level of English, this will be evaluated by the Selection and Monitoring Committee during the interview.

**According to Decree 822/202, of September 28, students with a disability equal to 33% or more have a reservation of 5% of the places.**

## Admission requirements

Requirements and criteria for admission can be consulted on the website of the [coordinating University](#).

## Admission documents

If you apply for admission to one of the UOC's doctoral programmes, you must provide the following documentation:

- Photocopy of your national ID card (DNI), foreigner ID number (NIE) or passport.
- A **letter of motivation/presentation** briefly explaining your career to date, and detailing the specific motivations for your application, a description of your research interests, and your connection with the research group.
- A **letter of endorsement** including the name of the researcher endorsing your project.
- A **CV**, including the masters degree and/or postgraduate programmes and courses taken that are related with the research interests expressed in the motivation letter, and, if applicable, any prior scientific output.
- **Academic transcripts** corresponding to predoctoral courses, stating the subjects taken and the mark obtained, the exam sitting, the type of subject, the number of credits, and the average grade of the academic record, if they have not been furnished to accredit compliance with the admission requirements.
- Certification accrediting the **level B2 of English (if you don't have a certificate the level should be evaluated in an interview)**
- **Documentation that accredits compliance with the access requirements.** Further information can be found in the corresponding section of the Campus, *Secretary's Office*.
- For university qualifications obtained in educational systems outside of the European Higher Education Area (EHEA) without official recognition, it is necessary to obtain authentication of the university qualification by diplomatic channels (or, where appropriate, with the Apostille of the Hague Convention). If the certificates, qualifications and academic records are not written in English or one of the official languages of the Spanish state, the documentation must be accompanied by a sworn translation into Catalan, Spanish or English. Failure to submit this documentation or instances of the information that it contains not matching the content of the request may lead to admittance to the doctoral programme being denied.
- Once your access documentation has been checked and your application accepted, admission to the programme depends upon submission of the official documentation.

## Evaluation criteria

The selection of the candidates will be made based on the score resulting from the evaluation of the following aspects, whose information will be required in any case from the candidate. The weighting of each of them is indicated in parentheses:

Adequacy to the Bachelor's and Master's degrees (20%).

Students who have completed a bachelor's or master's degree in bioinformatics will obtain the highest score in this section. Other degrees in the areas of Biology, Medicine, Computer Science, Physics, Chemistry, Mathematics and Engineering will receive 15% of the score. Other scientific degrees will receive 5% of the score.

Academic record at undergraduate and Master's level (50%)

The valuation of this point will be equal to the weighted average of the final grades of bachelor's and master's degree. If the program is accessed directly from a degree of 300 ECTS or more, the corresponding final grade will be used.

Motivation letter of maximum two pages (20%)

In it, the candidate must specify, in addition to the reasons why he wants to take this doctorate, his previous training and in which line of research of the Program is he requesting admission. In the event that the candidate wishes to propose a thesis supervisor, he must do so in this letter, giving details of the funded research project in which he would be integrated in the event of being admitted and subsequently assigned to said director. The candidate must also specify if he has applied for or has been granted a scholarship or if he has the opportunity to be hired to carry out the doctorate.

Additional academic activities (10%)

Published research papers and conference communications.

Whenever the coordinator of the university receiving the application deems it appropriate, he will carry out a brief interview with the candidate to clarify any pending questions, for example, if the documentation received does not prove the level of English language.

Admission is available throughout the academic year



# Request access

## 1 Apply for the Welcome and Information Service

Apply for the Welcome and Information Service is a free, no-obligation procedure that provides you with a user name and password that will allow you to enter the UOC's Virtual Campus, from where you will be able to:

1. Contact experts who will help you settle any doubts you may have about applying.
2. Consult the Campus Secretary's Office for information about the programme of studies, enrolment prices, documentation, etc.

### Access requirements

Before requesting access, check that you meet the requirements for the programme you want to be admitted to.

### Access form

On the access form, you must give your personal details and the educational level you have attained.

### Access Documentation

You will find a list of the documentation you need when you request access and can consult the Campus Secretary's Office.

#### Discounts

If you are eligible for any of the discounts stated in the Price Decree, you will have to submit the appropriate documentation, following the instructions given by the virtual Secretary's Office.

## 2 Access the Campus and contact the researcher

### Virtual campus

After you have requested access, you will receive a user name and password that will allow you to access the Virtual Campus, where you will find all the information and resources you may need.

### Researcher

You will find the information to contact the lead researcher in the "research lines" section. The researcher can provide support for preparing your application and will be your sponsor, if he or she agrees. Once you have been admitted to the programme, he or she will advise and guide you in choosing courses, in accordance with your prior academic background, your interests and the amount of time you have.

### Virtual Secretary's Office

There is a Procedure on the Campus where you can consult and manage all academic matters, such as viewing the programme of studies, payment options or the discounts available.

## 3 Apply for admission

You can complete the admission form the virtual campus **Procedures / Doctoral programme admission documentation**, where you will have to give your academic details, whether you want to apply for a grant and the research line you are interested in.

You must submit an enrolment proposal after having chosen the courses you want to follow during the semester, which your tutor will analyse so that you can complete enrolment with his or her counselling. It is a step prior to completing enrolment.

## 4 Send the digital documentation

Having completed the previous step, you must attach the documentation in the same section. You can see which documentation you must attach in the corresponding section within **Procedures / Doctoral programme admission documentation**.

When you have completed all the steps, the doctoral programme's academic committee will assess the applications that have been submitted.

If you pass the first phase of the admission process, you will receive notification confirming that you have entered the second phase and a telephone interview will be scheduled.

If you pass the second phase of the admission process, you will receive notification to confirm that you have been admitted. You will have a maximum of one month (counting from the admission notification) to confirm your acceptance of the place on the doctoral programme; if this confirmation from you is not received, you will not be admitted to the programme.

It is at this point that you will be able to complete enrolment, choosing your preferred payment option from among those available. If you are eligible for any of the [discounts](#) stated in the Price Decree, you will have to submit the appropriate documentation, following the instructions given by the virtual Secretary's Office.

Remember that once you have enrolled, you will have ten days to send the admission documentation.

The Government of Catalonia establishes the public prices for credits and other academic services charged by public universities in Catalonia and the UOC. You can consult the prices in [Decree 125/2023](#), of June 28th.

The fees will be those applicable when enrolment is completed. Subject to annual revisions.

### Price and enrolment Fees

Price per credit	32,28€/cr*
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Price per learning resources credit	15,16€/cr*
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### Biannual Fees

Fee for supervision, tutorship and continuous assessment of the doctoral thesis	200,56€
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Fee for the management of your record	54,54€
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Fee for learning support services	101,47€
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### Fees

Fee for requesting your certificate	218,15€
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Fee for oral examination and defence of the doctoral thesis	156,87€
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Fee for requesting your record	54,54€
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# UOC

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Consult the UOC educational offer [uoc.edu/en/studies](https://uoc.edu/en/studies)

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 Universitat Oberta  
de Catalunya