Higher Education in Spain
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1 AIM OF THIS DOCUMENT

This document provides a description of the higher education in Spain, focusing on the regulations of PhD studies and its costs, the available scholarships and grants and the involvement of the industry.

1.1 Applicable and Reference Documents


1.2 Document Overview

   The document is organised according to the following sections:
   1. Introduction: the chapter you are reading, it includes the objective, document overview, applicable and referenced documents.
   2. This section is devoted to the Structure of Higher Education.
   3. This section is devoted to the Regulation of the Doctorate’s degree.
   4. This section is devoted to the Costs of the Doctoral Studies.
   5. This section is devoted to the Involvement of the industry.
   6. This section is devoted to the PhD in figures.
2 STRUCTURE OF HIGHER EDUCATION

Higher education is mainly provided by both public and private (some of them affiliated with the Catholic Church) universities. Universities are divided into facultades universitarias, escuelas técnicas superiores, escuelas universitarias, institutos universitarios and other centres. Responsibilities on higher education mostly rest with the Comunidades Autónomas or Regions (following the provisions of 1978 Spanish Constitution, Spain is made up of 17 Regions). However, the definition of the national basic legal framework for higher education corresponds to the State.

Spain has used a three-cycle structure since 1983, but since 2011 it is following the new Bologna Process structure, which is also based on a three-cycle system that consists of the official Bachelor's degree, Master's degree and Doctorate's degree.

The Bachelor's degree is the first cycle programme, which consist of 240 ECTS (equivalent to four years) and leads to the Master's degree, which is the second cycle and may have between 60 and 120 ECTS (the expected duration is from one to two years). Universities may establish specific admission requirements to the Master's programme. Therefore, a minimum of 300 ECTS are required to access the third cycle, known as Doctorate's degree.

3 REGULATION OF THE DOCTORATE'S DEGREE

The maximum Spanish authority responsible in Higher Education is the Ministry of Education.

Spain's Parliaments (comprising the Senate and the Congress of Deputies) state decrees that are published in the Boletín Oficial del Estado (BOE). The Royal Decree 99/2011 [RD-1] states that the maximum duration of the PhD studies must be 3 years for full-time students and 5 years for part-time students. In addition to this, it is stated that the tribunal in charge of evaluating the doctoral thesis must be mostly conformed by members from outside the university where the PhD student is enrolled.

The requirements to access to the PhD studies are:

- EU students who hold both Bachelor and Master's degrees or their equivalents to the Spanish higher education diplomas, with a minimum total amount of 300 ECTS, where at least 60 ECTS must be from the second cycle.
- EU students who hold 300 ECTS from the first cycle may have access to third cycle studies by taking additional classes, for a total amount of credits determined by the Doctoral School, unless the Bachelor's degree has at least 60 ECTS contemplated to be equivalent to the level of the Master's degree credits.
- Students who hold a Bachelor's degree and have pass at least two years of any programme in Health Science.
- For non-EU students, the university must check that the student diploma is equivalent to the Spanish Master's degree and the student fulfils the requirements in his country to access to the Doctorate's degree.
- Finally, any person who has a Spanish Doctorate's degree is allowed to access to another Doctorate's degree.

Regarding the admission to the doctoral programme, universities through the academic commissions may define its own additional admission criteria. Furthermore, the admission may require additional specific academic training.
Universities can create Doctoral Schools to manage the PhD students and the Doctorate's activities. With aim to create an authorized Doctoral School, universities must fulfil the specific regional regulations.

The student admitted in a doctoral programme must do the registration once a year in its corresponding organizational unit. The student will be assigned a tutor, who must be a doctor with demonstrated research experience and must have working relationship with the organizational unit. In addition, the tutor will be the nexus between the student and the academic commission. The student will have assigned a thesis director, who may be the tutor or another doctor in a period of time no longer than six months after the admission.

The PhD student must elaborate a research Plan no later than one year after the first registration. The Plan must contain the methodology, objectives, means and the schedule of the activities that will be followed during the thesis. The Plan must be evaluated by the academic commission and its approval is indispensable to continue in the doctoral programme. In case of failing it, the PhD student will have six months to elaborate a new Plan, failing it again will suppose the expulsion of the PhD student from the doctoral programme. The Plan may be updated every year, in such case, it must be evaluated for its approval.

The doctoral thesis must consist of a novel research work elaborated by the PhD student. The organizational unit must establish the procedure to ensure a minimum level of quality of the doctoral thesis. These procedures usually are:

1. To have published or accepted for printing in a book a scientific work based on the thesis, or at least two scientific papers in a peer-reviewed journal recognizable at least in the first quartile. Note that this procedure may vary depending on the organizational unit.

2. The University will publish the thesis with the aim to be reviewed by other doctors before the dissertation. This procedure is BOE mandatory.

The thesis may be written and defended in any of the habitual scientific languages except if it will apply for international mention, in such case, the PhD student must be working in a recognized higher education institution, out of Spain for at least three months. Furthermore, at least the abstract and the conclusions must be written and presented in other language non Spanish. Moreover, to obtain the international mention at least one expert member of the tribunal must be from a non-Spanish higher educational institution or non-Spanish research centre.

The PhD student has to write a descriptive document with all the activities of interest performed throughout the PhD studies. Each university will define these activities of interest. This document must be regularly reviewed by both tutor and director of the thesis. The academic commission will evaluate the document of activities in a qualitative way to be taken into account as a complement during the thesis evaluation.

The tribunal in charge of evaluating the thesis and the dissertation must be formed by doctors with proven research experience. The defence of the thesis will be a public event where the PhD candidate will present his work and will defence it answering the questions made by the members of the tribunal and from any PhD attendant of the event.

PhD students in Spain are encourage to take additional cross-disciplinary courses. The Doctoral School of the Universitat Politècnica de Catalunya (UPC), in collaboration with other services such as the Libraries, Publications and Archives Service, the Language and Terminology Service, UPC Alumni, the Innova Programme and the Institute of Education Sciences, offers cross-disciplinary courses and training activities to doctoral candidates. These courses and activities are classed by subject, although the subject areas may vary depending on the courses on offer. These activities are usually free for doctoral candidates.
4 COSTS OF THE DOCTORAL STUDIES

The PhD students must do the registration every year. The total amount of the registration depends on the Spain region. The fee for a public institution in Catalonia is divided in academic costs for tutoring (401.12 €) and administrative costs, which consist of insurance (1.12 €), learning support (70 €) and academic record process (69.8 €). All together sum approx. 542 € per year.

The fees at private higher education institutions are established by institutions itself.

4.1 Scholarships and Grants

The doctoral studies may be covered by scholarship or grants, some of them are:

- **Formación del Profesorado Universitario (FPU):** is a scholarship program funded by the Ministry of Education. The FPU scholarships are integrated within the National Program of Human Resources Training and allow training in doctoral programs and research training solvency of those students who wish to focus their professional activity on the research and university teaching. There are 850 scholarships for this current call. The requirements are essentially those published in the BOE. The FPU covers the PhD student during 4 years with a gross salary of 1173 € per month (14 salaries per year).

- **FPU temporary stay and transfers:** aid (funded also by the Ministry of Education) for short stays active beneficiaries of an FPU scholarship directly help to strengthen the internationalization of doctoral education and promote the development of his thesis through stays abroad and exceptionally in Spanish centres. Aid for temporary transfer of fellows active FPU (internship contract) help to strengthen the internationalization of scientific training by joining a centre or group of relevant international and linked to the scientific field of their thesis research field. There are 550 scholarships for temporary stays and 30 for transfers in this current call.

- **Formación de Personal Investigador (FPI):** they are intended to aid the training of doctors by funding labour contracts, in the form of predoctoral contract, the trainee researcher in R&D, wishing to make a doctoral thesis associated with a research project funded by the State applet generation of knowledge in the framework of the State Program of Development of Scientific and Technical Research Excellence or aid for R+D+I "Research Challenges" the State Program of Research, Development and Innovation Oriented Challenges of the Company, respectively, in their calls 2015, the Ministry of Economy and Competitiveness.

- **Ajuts per a la contractació de personal investigador novell (FI):** the aim is to award grants, funded by the Government of Catalonia, to universities, research centres and/or hospital foundations to recruit early-stage research staff and promote research quality by means of the incorporation of this staff in research groups that develop a current and funded R&D project.

- **Universities in Spain also provide grants to PhD students, each university define its own conditions. The UPC provides general grants called FPI-UPC, which are intended to aid the training of doctors by funding labour contracts, in the form of predoctoral contract. This current call provides 13 grants, where 8 are totally funded by UPC and 5 co-funded (50%) by the Consorci Escola Industrial de Barcelona (CEIB). The FPI-UPC covers the PhD student during 3 years with a gross salary of 1173 € per month (14 salaries per year) and the tuitions. Furthermore, the UPC also provides specific grants, which are linked to specific university research groups, they have a pre-established line of research during the PhD studies. Moreover, they have additional specific admission requirements.**

- **Erasmus Mundus Joint Doctorate (EMJD):** offer EU funded fellowships for doctoral programmes starting in the academic year 2016-2017. These doctoral-level training and research programmes offer fellowships covering up to three years of doctoral activities. The EMJD grant was previously known as Erasmus Mundus.
5 INVOLVEMENT OF THE INDUSTRY

5.1 Bachelor’s and Master’s degree

Some public higher educational institutions like the UPC offer educational cooperation agreements during both Bachelor and Master’s degree. An educational cooperation agreement is a stay of internship in a company for an established period of time between the student and the company and with the consent of the university in which the student acquires professional competence, being mentored by experienced professionals.

This internship is remunerated by the company, which agrees to pay an amount directly to the student, by way of exchange or study aid, which is fixed at the time of signing the agreement (a guideline, this amount will be 8 € per hour). The final price will be set according to the center in which the student is enrolled. Exceptionally, internships no remunerated may be accepted under a justifying report made by the vice rector of the university.

The dedication of students, in general, is about 20 hours a week, to make it compatible with the studies. In the group of companies that can participate in this educational cooperation framework are include:

- Private companies.
- Companies and public institutions such as municipalities, provincial and other.
- Liberal professions and professional associations.
- The university itself.

Several higher educational institutions offer curricular internships, which are integrated into the curriculum as practical subjects, although not all degrees have practical subjects. As such, each center manages curricular internships based on specific rules that determine the allocation procedure for internships. Usually, this kind of internship is not remunerated.
5.2 PhD Studies

Regarding the third cycle, there is an important fund from the Government of Catalonia called Industrial Doctorates Plan, with the aim to strengthen academia-business partnerships.

The essential element of the Industrial Doctorates Plan is the industrial doctorate project, that is, a strategic research project carried out at a company that allows the PhD student to further develop his research training in collaboration with a university, and which is the object of a doctoral thesis.

The Government of Catalonia provides two types, of financial support to these projects, based on certain characteristics of project implementation:

1. Industrial doctorate projects co-funded by the Government of Catalonia.
2. Industrial doctorate projects with specific funding.

The main characteristics of the Industrial Doctorates Plan are:

- The Plan has a three years of duration.
- In case of industrial doctorate co-funded, the company hires the candidate with a minimum average gross salary of 22000 € per year. On the other hand, in case of industrial doctorate with specific funding, the company hires the candidate with a minimum average gross salary of 18000 € per year.
- The PhD student will be given a thesis director from the university and a project manager appointed by the company.
- The doctoral thesis will be carried out within the framework of a collaboration agreement between the university and the company.
- Candidates will be selected jointly by the university and the company. However, candidates must be accepted and admitted to the doctoral programme of the corresponding university.
- The place of work must be in Catalonia.
- There is a possibility to enroll non-Spanish companies, however, the fund will be only for the PhD student and the university.
- The candidate must have an average mark of 6.5 or higher (scale 1 to 10) on his or her academic transcript, calculated based on all credits of university studies that allow admission to a doctoral programme.
- The candidate will work exclusively on the research project.
- The thesis director must be part of an active recognized research group (SGR) of the Government of Catalonia or be an ICREA researcher or an ERC Grant holder.
- The time dedicated by the PhD student to the research projects will be divided between the company and the university.
- The PhD student will take part in training programmes in specific skills related to project coordination and management, business plans, industrial and intellectual property, among other relevant subjects.
- The PhD student will be given a yearly stipend (mobility fund), funded by the Government of Catalonia and accumulative for a maximum period of 3 years. Its purpose is to enable attendance at workshops and conferences related to the research project as well as stays at other company offices, universities or research centers outside Catalonia.
- All thesis defended under the Industrial Doctorates Plan will receive an Industrial Doctorate with distinction. The participating companies and academic directors will also receive acknowledgement for their participation in the Plan.
- In case of industrial doctorate co-funded, the 3-years funding for the company is 21600 €, 21600 € for the research group plus 3888 € for overheads and the PhD student 1872 € for tuition and 6600 € for mobility.
6  PHD IN FIGURES

Figure 1 shows an increase of the PhD in Spain over the years 1998-2011. Conversely, the number of PhD registrations depicts a flat trend for years 2003-2006. Furthermore, it is observed a decrement in registrations from 2006 to 2010 that could be explained by economic reasons, which affect directly over the funds. The source of the figures in this section presented is the Instituto Nacional de Estadística [RD-2].

![Figure 1: Number of PhD approved (red), number of PhD registered (blue) between 1998 and 2011. Data source INE.](image)

Figure 1 shows a big difference between PhD registered and graduated, the reason is that most of the PhD students were working in private companies while they were enrolled in the doctoral studies and they have not had enough time to write the thesis. Furthermore and unfortunately, in Spain, the PhD diploma is not a guarantee of success in the industry and it may cause troubles because superiors in industry rarely are PhD. In conclusion, although many PhD students have already done the research work they do not need the degree to be promoted in their companies, conversely it may suppose a problem.

Finally, with the aim to reduce the aforementioned differences between PhD registrations and graduates, the Royal Decree 99/2011, explained in this document, was stated in 2011, which includes a maximum duration of the doctoral studies. Therefore, one may expect this bias be reduced in the following years.
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