

Network Engineering PhD Program - Transversal Activity -

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Agenda

1. The PhD program

- The Network Engineering Doctorate Program at a glance
- Industrial Doctorate
- The Research Plan
- The PhD Defense
- International Doctorate mention
- The boards
- Quality indexes and metrics. JCR, SCOPUS.

2. Discussion and Open Questions [All]

3. Slides Show of the works in progress from all the PhD students

- available in the Entel web site for your interest (unless you specifically indicate the contrary)

A doctoral thesis

What is ?

A doctoral thesis is an original piece of research in any area of knowledge that is produced by a doctoral candidate under the supervision of a doctoral degree holder with accredited research experience.

What is expected ?

Candidates must demonstrate their ability to develop an independent work in research, development and innovation.

How is assessed ?

At a public defence in which the doctoral candidate presents the research to an examination committee of experts on the subject.

The Doctoral School

- https://doctorat.upc.edu/en?set_language=en
- Concerning the UPC:
 - is listed in the main international rankings as one of the top technological and research universities in southern Europe
 - is among the world's 40 best young universities.
- Some numbers



The Network Engineering Doctorate Program at a glance

- <https://entel.upc.edu/en>
- Origins: It grew out of a doctoral programme offered by the **Department of Applied Mathematics and Telematics** (more than 30 years old)
- The UPC research groups that support the doctoral programme are:

- BAMPLA
- GRXCA
- ISG
- MAPS
- SISCOM
- WNG.



Quality objectives of this PhD program

- To produce doctoral degree holders who have the **knowledge and skills required** to carry out R&D activities in multidisciplinary settings.
- To focus on **harnessing research results** generated within the doctoral programme, to benefit society.
- To ensure that work done on doctoral theses provides students with **suitable training** and gives them the knowledge and tools required to conduct research.
- To ensure that doctoral theses **contribute knowledge to society** and point to ways of **turning that knowledge into value**.
- To ensure that doctoral theses are of **demonstrable quality**, **measurable** in terms of the **quality of the publications** they generate and the interest that the work done attracts in the research community.
- To optimise the process of producing a doctoral thesis, minimising the time it takes to complete a thesis while ensuring that defined quality objectives are met.

NOTE: The Quality System of our program is based on the rules and procedures of the Internal Quality Assurance System (SGIC) of the UPC Doctoral School.

Staff in the PhD program (as of today)

- Academic Staff

- The Program Coordinator
 - Xavier Hesselbach (responsable.doctorat.entel@upc.edu)
- The Academic Committee of the Doctoral Programme (“CAPD”)
 - Xavier Hesselbach
 - Monica Aguilar
 - Anna Calveras
 - Israel Martín
 - Joan Serrat
 - Miquel Soriano
- The Doctors of the Department that are entitled to be supervisors.

- Administrative office

- Aurora Rubio (doctorat.entel@upc.edu)

ROADMAP

1. Admission

2. Registration → The clock starts running.

3. +1 year: Research Plan

4. +2 years: PhD Defense

Remarks:

- 1 year extension can be **requested** (only with **clear justification**).
- Another 1 year extension can be **requested** (only with real **exceptional justification**).
- Hard limit: 5 years (Risky and critical) → Exclusion.

The Industrial Doctorate

- What is ? An industrial doctorate **aims to encourage companies to participate** in doctoral programmes and promote **knowledge transfer** from universities to the socioeconomic environment by training young researchers.
- Doctoral degree certificates may include the **Industrial Doctorate mention** on the front if the following requirements are met:
 1. The doctoral candidate **participates in an industrial research or experimental development project carried out at a company or a public administrative body**. The industrial research or experimental development project must be directly related to his or her thesis.
 2. The doctoral candidate has an **employment or commercial contract with a private- or public-sector company or a public administrative body**. This relationship must be certified by means of a report approved by the University.
- Funding ? Doctoral candidates are **contracted** by companies or public administrative bodies. Companies may provide all funding from their own resources or receive partial funding through public financial aid:
 - Industrial Doctorates, promoted by the Ministry of Science and Innovation and the Ministry of Universities
 - Industrial Doctorates Plan (DI), promoted by the Government of Catalonia
 - European Industrial Doctorates (EID) - ITN Marie Curie calls, among others

When you finish your thesis, if you meet all the requirements, you can apply for the Industrial Doctorate mention

The International Mention

The doctoral degree certificate may include the International Doctorate mention on the front. To be awarded the mention you must:

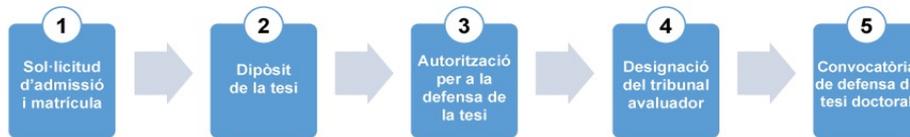
- Spend **at least three months** at a respected higher education institution or research centre outside Spain to study or do research.
- Part of your thesis, at least the abstract and the conclusions, **must be written and presented** in one of the languages commonly used for science communication in your field of research, which must not be an official language of Spain. This rule does not apply to stays and reports in Spanish or to experts from Spanish-speaking countries.
- At least two PhD-holding experts belonging to a higher education institution or research centre outside Spain must have issued a report on the thesis.
- The thesis examination committee must include at least one PhD-holding expert from a higher education or research institution outside Spain who was not responsible for the candidate's stay abroad.
- The thesis defence must take place at the UPC or, in the case of joint programmes, at the location specified in the collaboration agreement.

The Research Plan

- **Before the end of their first year of study**, doctoral candidates must prepare a research plan, which will be included in their doctoral student activity report.
- It must be approved by the candidate's thesis supervisor and must specify the methodology that will be used and the objectives the research aims to achieve.
- The first presentation of a candidate's research plan will take the form of a public defence, which will be assessed by a committee.

- **Format of the Research Plan (about 40 pages)**
 - The writing format is free, but normally it is expected the following:
 - Index
 - Summary
 - Objectives
 - State of the Art
 - Work plan
 - Conclusions
 - Bibliography.

The PhD Defense (I) (<https://doctorat.upc.edu/en/doctoral-thesis/deposit-and-assessment>)



Who intervenes in the thesis deposit process?

The following agents and governing bodies of the University intervene in the process of depositing your thesis (in order of intervention):

- You (doctoral candidate)
- Your thesis supervisor (or supervisors in the case of co-supervision)
- The academic committee of your doctoral programme
- The managing unit of your doctoral programme
- The Standing Committee of the Doctoral School
- The doctoral unit (of the Doctoral School)
- The vice-rector for Academic Policy

How much time is needed to deposit the thesis?

The process can last approximately three months, although this may vary for each deposit.

Stage 1: Application for admission and enrolment

Stage 2: Thesis deposit

Stage 3: Authorisation of the thesis defence

Stage 4: Appointment of the examination committee

Stage 5: Call for the doctoral thesis defence

Note: Exact Procedures that define how to do the drafting, presentation and public defense of the doctoral thesis are in chapters 10, 11 and 12 of the Academic Regulations of the Doctoral Studies.

The PhD Defense (II)

As a general rule, and to avoid delays in this process:

- **A summary of the contributions made must be sent to the CAPD** (by e-mail to the program coordinator) including the following information:
 - A **summary of the doctoral thesis** of approximately one page.
 - A **list of all the contributions made** in the doctoral thesis with a brief description of a paragraph justifying the relevance of each of them.
 - A **list of all the publications** of the doctoral student indicating which of the thesis contributions each presents.

- **The Committee will review the documentation**
 - within a **maximum period of one month** will evaluate the deposit and defense proposal.
 - If these criteria are not met, the Committee will reject the reading proposal, which can not be resubmitted until new contributions have been made.

The Boards

- For Research Plan
 - A member of the research Group
 - A member of the PhD Program
 - An external member

- For PhD Thesis Defence
 - 3 or 5 members

Monitoring

- After a student enrolls for the first time, a **doctoral student activity report** ("DAD") will be generated **and kept up to date from that point on.**



- Each student's report will be:
 - **reviewed** by their thesis supervisor
 - and **assessed annually** by the academic committee of the doctoral programme.

Courses and seminars

- Courses and seminars are intended to offer **additional knowledge, information and training** in topics related to doctoral research, and on the socio-economic and technological environment students are immersed in. → Transversal activity.
- The Department regularly organises joint seminars with the Castelldefels School of Telecommunications and Aerospace Engineering (EETAC) and the Barcelona School of Telecommunications Engineering (ETSETB). These seminars usually run for two hours.

[You will periodically receive information by email about those activities.](#)

Publications

- **To complete a doctoral thesis**, each student is required to have published:
 - **at least one relevant paper** in a **JCR-indexed journal**
 - **preferably high-impact publications**
 - in addition to others in lower-impact publications
- Papers may be published at any stage over the three years that the programme runs.

- **What is JCR-indexed journal ?**
 - A Journal that is included in the JCR lists.
 - Metric: **Impact Factor**
 - Relevance: **Quartile (Q1, Q2, Q3, Q4)**.

How to get the Impact Factor / Quartile

<https://bibliotecnica.upc.edu/colleccions/bases-dades>

1. Indicate “Web of Science”
2. Select Web of Science from the list.
3. Log in (UPC credentials) and in FECYT listing select UPC
4. Select “Herramienta de Analisis del JCR”
5. Put your Journal of interest (Example: Computer Networks)

Databases

Relevant ID and metrics for a researcher

- **ID**
 - ORCID
 - WoS ResearcherID
 - Scopus Author ID

- **METRICS**
 - H-index (“Hirsch”)
 - From JCR
 - From SCOPUS
 - “impacto normalizado”
 - Number of papers / activities
 - Patents
 - Participation in projects

Final remarks

- Relevance of the Transversal knowledge
 - Write project proposals
 - Good presentation skills
 - Etc.

- International Mention

- Once the PhD Thesis is defended (The PhD is completed):
 - Do not miss to request the PhD official Certificate **to the Doctorate School** (it is not done by default).
 - In case of necessity, a temporal certification can be requested, in advance to the definitive certification.

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