Deusto
International Research School-DIRS

ENGINEERING FOR THE INFORMATION SOCIETY AND SUSTAINABLE DEVELOPMENT

Recommended admission profile

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1. DETAILED DESCRIPTION OF THE RECOMMENDED ADMISSION PROFILE

Having accredited compliance with the PhD programme admission requirements and taking into account the interdisciplinary nature of the programme, the admission requirements are as follow:

1.1 Background

- **A Bachelor's degree** in any of the **following fields:** Computer Engineering, Telecommunications Technology Engineering, Audiovisual Systems Engineering, Telematics Engineering, Industrial Technologies Engineering, Industrial Electronics Engineering and Automation or Industrial Management Engineering.

- An **official Master's degree** in any of the **following fields:** Computer Engineering, Telecommunications Engineering or Industrial Engineering.

- The **Master's degree** must include a minimum of **10 ECTS credits in research techniques/methods** or a supervised research project. Otherwise, students must take the mandatory training courses described in paragraph 3.4.

- The **following official Master's degree** programmes taught at the **University of Deusto** are valid for entry to the PhD programme: Master's degree in Information Security and Master's degree in Development and Integration of Software Solutions. In such cases, it is also necessary to take the doctorate training courses described in paragraph 3.4.

- Knowledge of **English level C1.**

- The ability to **express oneself adequately in writing and orally.**

- The ability for **multidisciplinary and teamwork** in addition to **personal maturity.**

- **Interest in the research focus areas** of the PhD programme.

- Availability to **carry out the activities planned** for this programme and, in particular, stays at other universities and research centres.

- **Recipients of grants from national or international organisations,** whose award is based on the candidate's CV (this is not a requirement but will be especially taken into account when evaluating applications).

1.2 Other merits which be positively valued

- **Continuing education courses** related to this specialist field
- **Work or volunteering** in this field
- **Research experience** in the field (participation in research projects, publications, etc.) prior to entering the PhD programme
- **Stays abroad**
- **Proven knowledge in other thematic areas** related to the research area, including computer tools

2. CRITERIA FOR ASSESSMENT AND WEIGHTING OF MERITS

Item	Indicators	Weighting	Source
Qualifications academic record grade	Average grade/ coincidence with the program area	15% + 10%	Academic record
Qualifications and academic record grade master's degree	Average grade/coincidence with the program area	15% + 20%	Academic record
Research experience	Publications and projects	5%	Curriculum vitae
Matching of research interests with the lines of the programme	Assessment by the academic committee	15%	Work proposal. Assessment of the principal investigator of

			a team
Other merits	-Continuing Education -Professional or volunteer experience -Stays abroad.	5%	Curriculum Vitae
Other merits	- Professional Objectives - Expectations concerning the programme - Attitude and personal maturity - Planned dedication to the program	5%	Presentation letter and personal interview
To have a research grant	Concession/Duration and amount	10%	Grant Document

2.1 Training complements

Research Methodology Course (5 ECTS).

The objective of this course is to enable the student to master scientific-technical research methodologies and effectively design a project of research, choosing the most appropriate one according to the objectives to be achieved.
Students with a University Master's degree who have been admitted to the programme but have not studied must take this course previously techniques/methods of research or carried out a supervised research project.
This course is divided into 3 modules:

- **Research Methodology: 2 ECTS**. The purpose of this module is to introduce doctoral students to what a doctorate is, what it entails and what methodologies are usually used to undertake it.It will make the doctoral student wonder why and what he or she wants to do a doctoral thesis for. It will motivate the doctoral candidate without hiding

the difficulty and the enormous
effort and perseverance required for a doctoral thesis. Give examples of doctoral theses and invite a doctor to explain his or her experience.
during the doctorate. Train the doctoral student in research techniques and methodologies. It will help him to use his logic and intuition to apply
a set of good practices aimed at carrying out research. Explain the difference between basic and applied research. Explain the importance of
of scientific indicators and impact indices in publications for the accreditation of researchers. Illustrate how to read and write a paper.
It will teach how to identify the most relevant publications and conferences to a given topic.

- **Experimentation: 1.5 ECTS.** This module explains the difficulties of making use of research methodologies based on experimentation (common in classical disciplines) such as medicine, biology or chemistry), within Computer Science and Communication Sciences. The student will be taught to understand the strengths and weaknesses of a scientific publication describing a work of experimentation in order to help you in the realization of future articles of quality.

- **Quantitative and qualitative methods: 1.5 ECTS.** This module addresses the need to use quality and quantity metrics of samples and data to conduct adequate research. That is to say,
aims to teach students to draw accurate conclusions with the information at their disposal. He will explain the need to have these values in order to
apply validation methods with scientific rigour. The student will understand that the research must be objective and replicable. He will make an introduction
methods and tools for data validation and management.

Supervised research work (5 ECTS)

The objective of this course is to elaborate a Thesis project proposal in which the chosen thesis topic is justified on the basis of: the state of the art, the scientific-technical interest of the subject and social relevance, the establishment of reasonable objectives and hypotheses, and the selection of the appropriate methodology to carry out the proposed research and the achievement of objectives based on the established hypothesis.

Students with a Master's Degree who have been admitted to the programme but have not studied must take this course previous research techniques/methods or carried out a supervised research project.

It is not only a question of developing a research project, but also of demonstrating the research capacity, within the framework of a thesis doctoral, addressing the development of the research project defined in the previous four-month period. This project is divided into three phases:

- Bibliographic review. As a result, the student must submit a document containing: a) the state of the art of the proposed research topic, b) an exposition of the adopted research methodology and c) a list in scientific format of the sources used.

- Framing of the research. As a result, the student will: a) clearly indicate which research opportunity is seen to have analyzed the state of the art, b) establish the scientific-technical interest and the impact of the research topic, and c) propose the hypothesis and objectives of the research.

- Methodology. As a result, the student will deliver a document that explains the methodology that is intended to be used to the achievement of the objectives, including: (a) phases into which the work will be divided, (b) tasks to be carried out at each phase, (c) explanation the methodology to be used for each task and d) a reasonable timeline for the development of the thesis over time.