



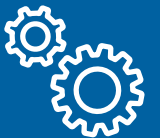
CEU

*Escuela Internacional
de Doctorado*



BASIC GUIDE

PhD Programme in
**Engineering and Technological Development in
Industrial, Biomedical and Computational Applications**



A scientist in a white lab coat is shown in profile, working in a laboratory. The scientist is holding a small object in their hands, possibly a sample or a tool. In the foreground, there is a large, cylindrical piece of scientific equipment, likely a centrifuge or a similar instrument. The background is slightly blurred, showing other laboratory equipment and a bright light source, possibly a window or a lamp. The overall scene is a professional laboratory setting.

***“ Technology Transfer and
Competitive Development ”***

Welcome to the CEU International Doctoral School

The CEU International Doctoral School (CEINDO) brings together various research groups made up of doctors with accredited research experience. The faculty ensures high standards in the application of the tutoring system and the quality of doctoral training.

Early-stage researchers registered at CEINDO will be assigned to one of the established research groups. They will find the ideal environment to contribute to the process of updating knowledge, play a key role in the innovation of specialised areas of expertise, reveal their research results to society and establish relationships with relevant research centres in the international field.

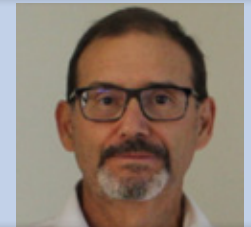
This programme aims for students to develop scientific and research methodologies under an engineering approach by means of computational modelling tools and the development of new materials, products and devices. They will acquire specific, advanced knowledge on different aspects of the application of technologies in different fields of engineering, such as industrial, energy and biomedical engineering.

The Engineering and Technological Development in Industrial, Biomedical and Computational Applications Programme combine the following pedagogical approaches, all of which are complementary and necessary in the student's training:

- » Scientific and research training in different disciplines and developing skills in the systematic application of scientific methods in the development of new materials, devices and services.
- » Integration in the productive and business sector, facilitating skills acquisition for technology transfer and competitive development.



FERNANDO SÁNCHEZ LÓPEZ
Program Coordinator



ANTONIO FALCÓ MONTESINOS
Program Secretary



ABRAHAM OTERO QUINTANA (CEU USP)
Deputy Programme Coordinator

ACADEMIC COMMISSION

This Academic Commission is composed of a team that oversees the quality, updating and co-ordination of the programme, thereby responsible for its definition. They supervise the progress in research, the training of researchers and authorise the submission of doctoral theses.

ADMISSION CRITERIA

The Academic Commission is responsible for the admission of applicants in accordance with the criteria established in the Academic Report and current legislation.

The researcher-in-training will engage in complementary training in addition to the compulsory training activities as the Commission deems appropriate.

ACADEMIC COMMISSION

COORDINATOR (CEU UCH):

FERNANDO SÁNCHEZ LÓPEZ · fernando.sanchez@uchceu.es

DEPUTY COORDINATOR (CEU USP):

ABRAHAM OTERO QUINTANA · aotero@ceu.es

SECRETARY (CEU UCH):

ANTONIO FALCÓ MONTESINOS · afalco@uchceu.es

RESEARCH LINE COORDINATOR:

FLAVIANO GARCÍA ALVARADO · flaga@ceu.es

RESEARCH LINE 1. **Material Engineering and Technologies, Industrial Design and Production and Energy.**

RAFAEL RAYA LÓPEZ · rafael.rayalopez@ceu.es

RESEARCH LINE 2. **Biomedical Engineering and Technologies, Electronics, Automation and Signals.**

IGNASI ROSELL ESCRIBÁ · rosell@uchceu.es

RESEARCH LINE 3. **Computational Methods in Technology Sciences.**

POSTDOCTORAL ADVISORS:

JAVIER TEJEDOR NOGUERALES · javier.tejedornoguerales@ceu.es

DURATION OF STUDIES

(Starting from admission to the programme until the submission of the doctoral thesis)

FULL-TIME STUDENTS:

A total of three years beginning from the student's admission to the programme until the submission of the doctoral thesis (if the application for the deposit of the thesis has not been submitted by the above-mentioned deadline, the Commission responsible for the programme may authorise an extension for another year, which may then be extended for an additional year on an exceptional basis).

The defence of the doctoral thesis may not be carried out before two years have elapsed from the date of admission and always with the express approval of the Academic Commission.

PART-TIME STUDENTS:

The duration of the part-time programme is a total of five years starting from the student's admission to the programme to the submission of the doctoral thesis (if the application for the deposit has not been submitted by the end of that period, an extension for a further two years may be authorised, and in exceptional cases may be extended for another year).

Part-time students may not defend their doctoral thesis before four years have elapsed from the date of admission and always with the express approval of the Academic Commission.

Part-time dedication may be requested by those who perform or develop professional or occupational activities that prevent them from devoting their full time to the doctoral studies, as well as other circumstances that the Commission sees fit.

When these circumstances cease to exist, and upon request, full-time dedication may be granted.





RESEARCH LINE 1. MATERIALS ENGINEERING AND TECHNOLOGIES, INDUSTRIAL DESIGN AND PRODUCTION, AND ENERGY

Research Line Coordinator: FLAVIANO GARCÍA ALVARADO

This line of research focuses on the acquisition and generation of advanced knowledge in the analysis, modelling, characterisation and design of new materials and devices in the industrial and energy fields. Its scope of activities is as follows:

- » Synthesis and processing of new functional materials and their chemical and physical characterisation. Analysis of mechanical, electrical, and electrochemical properties and their different applications.
- » Design and testing of prototypes. Determination of operational performance and productive and industrial viability.
- » Modelling and validation of new technologies and devices in their different applications in industrial and energy fields.



RESEARCH LINE 2. BIOMEDICAL ENGINEERING AND TECHNOLOGIES, ELECTRONICS, AUTOMATION AND SIGNALS

Research Line Coordinator: RAFAEL RAYA LÓPEZ

This line of research aims to define multidisciplinary research in advanced knowledge of biomedical and related applications. Its scope of activities is focused on:

- » Design and development of new signal processing algorithms, new system control strategies and algorithms, as well as the design of hardware with applications in metrology algorithms, automation, and embedded systems.
- » Development of cross-cutting applications of signal processing, control and electronics technologies such as the development of disability assistance devices, rehabilitation devices or telemonitoring solutions.



RESEARCH LINE 3. COMPUTATIONAL METHODS IN TECHNOLOGY SCIENCES

Research Line Coordinator: IGNASI ROSELL ESCRIBÀ

This line of research seeks to integrate multidisciplinary investigation associated with advanced knowledge of Computational Mathematics, Computational Physics, Quantitative Biology in the different applications of the Engineering Programme.



ORGANISATION

1. MENTOR AND THESIS ADVISOR

Each student enrolled will be assigned a mentor and a doctor with accredited research experience linked to the programme who will be responsible for training at the beginning of his/her studies.

The Academic Commission will appoint the doctoral thesis advisor within a period of three months who will guide the researcher during his or her training period until the defence of the thesis; this will ensure the originality, coherence and suitability of the research plan and guide the researcher in the planning of tasks and activities.

The mentor and advisor should preferably fall on the same person.

The Commission may authorise the co-direction of the thesis and a change of advisor.

2. DOCUMENTARY COMMITMENT

Once enrolled in the Doctoral Programme the student will proceed to sign the documentary commitment. It will be signed by the trainee researcher, his/her mentor, thesis advisor(s), and then by the Director of CEINDO.

The documentary commitment sets out the rights and duties of the researcher, mentor and thesis advisor(s), as well as the Institution represented by the Director of CEINDO, committing all of them to comply with the code of good practices.

3. TRAINING COMPLEMENTS

In cases where the researcher-in-training does not have previous training to access this Doctoral Programme, admission may be conditional to completion of training complements that the Academic Commission determines on a case-by-case basis.



4. TRAINING ACTIVITIES

All trainee researchers must participate in and pass all mandatory compulsory training activities planned within the framework of the Programme, as well as ones that they have taken on their own initiative, or as per the indication of their advisor(s).

The training activities in which the researcher participates will be recorded in the activity logbook. They must be supported by a document accrediting the successful completion and/or participation in the activity.

7. ANNUAL EVALUATION

The Academic Commission will evaluate the activity of the researcher in training annually. The advisors and researchers must, therefore, upload the following documentation before the indicated date, both in SIGMA as well as in the programme's Share point:

5. RESEARCH PLAN

Before the end of the first year, research trainees will develop a research plan that includes background, objectives, methodology, bibliography, and a provisional schedule that must be endorsed by the thesis advisor.

This document will be updated annually, and include the results obtained in the evolution of the research, the fulfilment of the timeline and the schedule of the thesis.

- 1. Certificates of the activities passed.**
- 2. The research plan.**
- 3. The report of the thesis advisors.**

In the event of a negative evaluation - duly substantiated - the work of the researcher in training will be re-

6. PRE-DOCTORAL DAY

At the end of each academic year, a day will be held for trainee researchers to publicly defend their research plan in front of the professors of the Doctoral Programme and members of the Academic Commission.

After the defence, the members of the Commission and the professors of the Programme will review the research plan and discuss its fundamental aspects.

evaluated within a period of six months at the latest, by which time he/she must update the above-mentioned documents. In the event of another negative evaluation, the researcher will ultimately be withdrawn from the Programme.

TRAINING ACTIVITIES

FULL-TIME COMMITMENT

1st year

Advanced search techniques and documentation management applied to research

Evaluation and assessment of scientific production

Ethical use of scientific documentation



PART-TIME COMMITMENT

1st year

Advanced search techniques and documentation management applied to research

Evaluation and assessment of scientific production

Ethical use of scientific documentation

2nd year

Advanced search techniques and documentation management applied to research

Evaluation and assessment of scientific production

Ethical use of scientific documentation



ANNUAL ACTIVITIES

(Mandatory for all students regardless of their year and dedication)

Pre-doctoral day

Work meetings with advisor(s)

TRAINING COMPLEMENTS

The academic commission will determine the complementary training activities (courses, research work) for each case.

ELECTIVE ACTIVITIES

(Offered to all students regardless of their year and dedication)

Transfer of research results

Convocations for research grants: national and European competitive projects

Attendance at seminars or research conferences on subjects related to the doctoral programme

Attendance at conferences

Seminar Delivery

Presentation and defence of papers at scientific congresses and meetings

Writing and publication of a scientific paper or chapter of a book

Teaching in workshops and laboratories

Attendance at specialised training sessions

Stays in research centres, companies, and universities national or foreign.



DOCTORAL THESIS. DEPOSIT AND DEFENCE

1. PRE-REQUISITES FOR THE DEPOSIT APPLICATION

- A favourable report from the thesis advisor(s).
- Completion of all compulsory training activities (and complementary training if required) of up to 120h in optional training activities.
- Completion of a research stay of at least one month in a centre other than the one where the student is conducting his/her doctoral thesis (in the case of wanting to access the International Doctorate Mention the minimum stay must be three months in a centre outside the national territory) during the period the student is enrolled in the programme.
- The achievement of scientific productivity in the form of publications established by the corresponding Academic Commission.

2. APPLICATION FOR THE DEPOSIT OF THE DOCTORAL THESIS

The interested party will submit the following documentation to the Director of CEINDO who will immediately pass it on to the Academic Commission:

- a. Deposit application with the approval of the thesis advisor(s).
- b. Applicant's CV
- c. Personalised activity notebook, countersigned by the advisor, which must state that the stay has been carried out in a research centre as foreseen in the corresponding Programme Report.
- d. One bound copy of the doctoral thesis and another in electronic format.
- e. A list of five candidates, plus two substitutes, who will sit on the selection board. The corresponding CVA must be attached, expressly stating the six-year periods recognised by the CNEAI and the periods covered as well as the theses supervised and defended. This list must be approved by the Advisor(s) of the Doctoral Thesis.
- f. A copy of the publications derived from the doctoral thesis.
- g. If the PhD student aspires to obtain the International Mention to the title of Doctor, the following must be submitted: reports from two international experts in the field and documentation that accredits that the doctoral student meets all the requirements established in point 1 of art. 15, RD 99/2011.

The Academic Commission will, if appropriate, communicate the approval of the deposit to the CEINDO Director, which will mark the start of the 15-day working day period of the deposit and public exposition. The interested party, the thesis advisor/s and the members of the examining board will be informed:

- As soon as the doctoral student has received this communication, he/she must send each member of the panel:
 - » A copy of the thesis in the format indicated.
 - » CV

- » A copy of the publications derived from the doctoral thesis.
- » A Personalised Activity Document that is approved by the Director(s) and the Academic Commission.
- Once the members of the examining board have received the copy of the thesis, they must issue a reasoned report within a period of 15 calendar days, indicating whether the thesis meets the necessary conditions to be presented for defence.

3. DEFENCE AND GRADING OF THE DOCTORAL THESIS

- The defence will take place in a public session and will consist of a presentation by the PhD student of the preparatory work carried out, the methodology, the content, and conclusions of the thesis with special mention of the original contributions to the subject under study.
- At the end of the thesis defence, and after deliberation and voting in closed session, the examining board will award the overall grade of NOT APPROVED, APPROVED, NOTABLE or EXCELLENT.



RESEARCH FACULTY

ULISES JULIO AMADOR ELIZONDO
GLORIA ANEMONE
MARÍA TERESA AZCONDO SÁNCHEZ
SARA BARQUERO PÉREZ
PABLO BERNÁ LARROSA
GABRIEL CAFFARENA FERNÁNDEZ
LUIS DOMÉNECH BALLESTER
ANTONIO FALCÓ MONTESINOS
MARIANO FERNÁNDEZ LÓPEZ
FLAVIANO GARCÍA ALVARADO
RODRIGO GARCÍA CARMONA
CONSTANTINO ANTONIO GARCÍA MARTÍNEZ
VÍCTOR GARCÍA PEÑAS
ALBERTO GIL DE LA FUENTE
DAVID GONZÁLEZ MÁRQUEZ
LUCÍA HILARIO PÉREZ
RUZICA JEVTIC

ALOIS KARL KUHN
ANTONIO MARISCAL JIMÉNEZ
NICOLÁS MONTÉS SÁNCHEZ
FRANCISCO JAVIER MUÑOZ ALMARAZ
ABRAHAM OTERO QUINTANA
JUAN PARDO ALBIACH
RAFAEL RAYA LÓPEZ
ANTONIO REAL FERNÁNDEZ
JORDI RENAU MARTÍNEZ
IGNASI ROSELL ESCRIBÀ
CRISTINA SÁNCHEZ LÓPEZ DE PABLO
FERNANDO SÁNCHEZ LÓPEZ
ÁLVARO SÁNCHEZ PICOT
CARLOS OSCAR SORZANO SÁNCHEZ
JAVIER TEJEDOR NOGUERA LES
ALBERTO ZAPATERA LLINARES

CONTACT DETAILS AND INFORMATION

You can access detailed information about the different Doctoral Programmes at the CEU International Doctoral School CEINDO on its website:

www.escueladoctorado.ceu.es

For further information, please contact the School's e-mail address:

info.ceindo@ceu.es

Request information regarding CEINDO:

<http://servicios.ceu.es/ceu-Ceindo/Publico/Solicitarinformacion.aspx>

CEINDO Admission Application:

<http://servicios.ceu.es/ceu-Ceindo/Publico/SolicitarAdmision.aspx>

APPLICABLE REGULATIONS

<https://www.escueladoctorado.ceu.es/conocenos/normativa/>

<https://www.escueladoctorado.ceu.es/conocenos/calidad/>



CEU

*Escuela Internacional
de Doctorado*



CEU

*Universidad
Cardenal Herrera*



CEU

*Universidad
San Pablo*



*Universitat
Abat Oliba CEU*