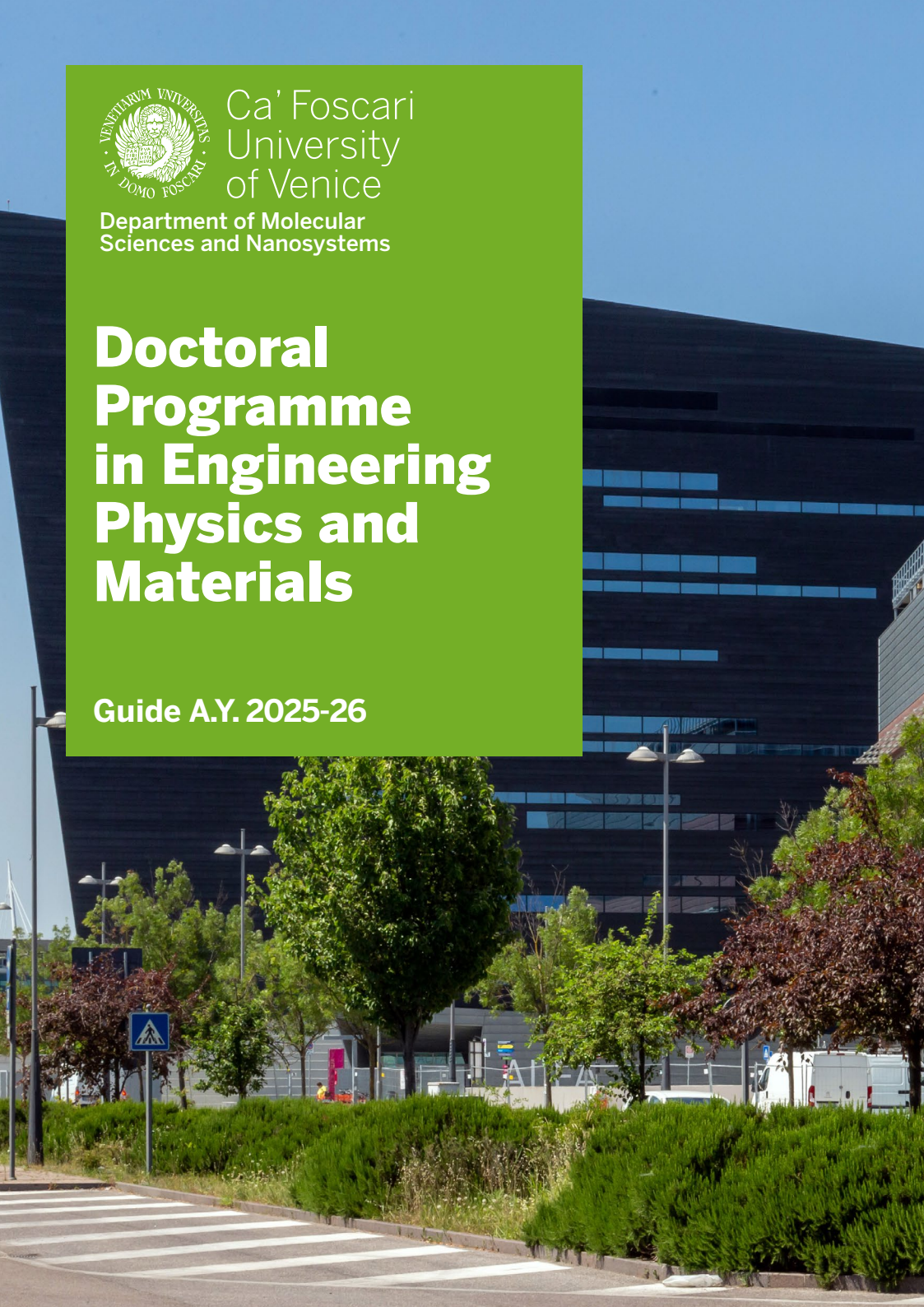
Ca' Foscari University of Venice

Department of Molecular Sciences and Nanosystems

Doctoral Programme in Engineering Physics and Materials

Guide A.Y. 2025-26



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Welcome

Dear Students,
welcome to the PhD Programme in Engineering Physics and Materials!
The PhD Course is a three-year doctoral programme at Ca' Foscari University offered by the Department of Molecular Science and Nanosystems starting from September 2018 in partnership with **The National Cancer Institute** (Centro di Riferimento Oncologico, CRO) in Aviano (PN) and the **Kansai Medical University**, Osaka, Japan and in collaboration with many Companies and Research Insitutes.
Website of the PhD Program: www.unive.it/web/en/15106/home

The PhD in Engineering Physics and Materials is designed to train the next generation of top-tier researchers, capable of thriving in multidisciplinary environments and leading cutting-edge research projects. This three-year program offers an internationally competitive education, including study periods at prestigious partner universities or innovative companies. Our PhD curriculum bridges information technologies, material sciences, and bio- & nanotechnologies, equipping you with the expertise to tackle today's most pressing scientific and technological challenges. The training project in Engineering Physics and Materials includes a subdivision between two curricula:

- **Information Technologies**
- **Bio and Nano Material Technologies**

The curriculum in Information Technologies focuses on cutting-edge research lines that lie at the intersection of theoretical physics, applied physics, materials science and information engineering, quantum technologies, advanced materials, electronics, optics, photonics, optoelectronics, statistical mechanics, complex systems and artificial intelligence. The curriculum aims to prepare researchers capable of developing concrete technological solutions applicable in industrial contexts.

The curriculum in Bio and Nano Material Technologies integrates advanced biology skills with materials science, chemistry, physics and computer science. The course includes the analysis of complex systems for biology and bioinformatics, with a special focus on development of new bio-compatible and bio-derived materials, the implementation of nanotechnologies and data analysis for precision medicine, advanced diagnostics and personalized therapy.

On behalf of the PhD Faculty,
I welcome you aboard and wish you the
best for your PhD experience!

Flavio Rizzolio
Coordinator of the PhD Course
in Engineering Physics and Materials
e-mail: flavio.rizzolio@unive.it

Faculty Board & Staff

unive.it/web/en/15103/faculty

Teaching Committee

Stefano Bonetti

Pietro Riello

Alvise Perosa
Deputy Coordinator

Enrico Trave

Guido Caldarelli

Flavio Rizzolio
Coordinator

Alberto Vomiero

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Deputy Coordinator Curriculum in Information Technologies

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Giovanni Antonio Salvatore

Matteo Gigli

Sabrina Tamburini
Deputy Coordinator Curriculum in Bio and Nano technologies

External members

Vincenzo Canzonieri, CRO Aviano
Maurizio Mongiat, CRO Aviano
Tiziana Perin, CRO Aviano
Giuseppe Pezzotti, Kansai Medical University (Japan)

Secretariat

Francesca Guidi
e-mail dottorato.nanobio@unive.it
Alfa Building, 4th floor – Scientific Campus via Torino, 155 Venezia Mestre 30172
website www.unive.it/web/en/195/home

General organisation

The PhD programme is a in three-year full-time programme. The first and second year are characterized by an advanced learning programme depending on the chosen curriculum, visible at www.unive.it/web/en/15104/programme-and-courses. The first year and second year are characterized by an advanced learning programme of mandatory research-oriented courses on research methods and key topics. Students are encouraged to participate to the departmental activities (lectures, seminars, presentations, workshops, etc.) during all the three years. If necessary, most of the courses and seminars can be given in videoconference mode. Early November, PhD students enrolled in the first year must present to the Faculty Board their research project, which will be the first milestone for their PhD dissertation development and the related choice of a PhD thesis supervisor. In the second and third year, PhD students are encouraged to plan international mobility (summer schools, conferences, research abroad in a foreign institution). Participation in top international conferences is recommended and financially supported. Student of the Industrial Doctoral Program can match the didactic activities with their working program with the help of the Steering Committee.

The doctoral students must undergo a verification of their research results at the end of every year.
If the verification by the Teaching Committee is positive, doctoral students will be admitted into the subsequent year.

At the end of the third year the PhD student undergo a final examination with an external examination Board.

By the end of the PhD program the students must have published at least 1 paper written with her/his first name, or even sent it to the editor and accepted for the review. The Steering Committee will examine any exception.

Regulation of the PhD Programme in engineering Physics and Materials

1. **Thesis supervisors** are approved by the Academic Board. The Coordinator is delegated by the Academic Board to direct the PhD student in choosing the Supervisor in cases where the supervisor is not immediately identifiable.

2. The **study plan**, submitted on a special form provided by the secretariat, must be delivered by the end of November of each year for approval by the Steering Committee. The study plan, to be updated annually, **includes the research plan and the plan of training activities**, as indicated below:

a) the scientific research plan must be established in agreement with the supervisor, who will supervise the doctoral student in each phase of the research project. The plan must be coherent with the choosen curriculum. The supervisor has the task of contributing to the definition of the individual training and research plan, monitoring the availability of sufficient funds and equipment to carry out the research project proposed to the doctoral student, following the entire training course of the PhD student, providing an annual report to the Board of teachers on the activity of the PhD student.

b) The training activity plan must include the attendance of at least 2 didactic activities for doctoral students to be carried out preferably between the first and second year and to be selected from list of the didactic activities offered by Engineering Physics and Materials doctorate www.unive.it/web/en/15104/programme-and-courses and Sustainable Chemistry doctorate www.unive.it/web/en/227/programme-and-didactic activities.

Didactic activities for doctoral students borrowed from other doctoral programs of the University (e.g. Machine Learning) can be chosen as supernumerary or free choice upon the approval by the Academic Board. 15 hours Didactic activities for PhD students belonging to the Joint doctorate in Chemistry can be chosen as supernumerary.

The study plan may also include didactic activities or teaching modules of Master's Degrees, or didactic activities offered by other Institutions/Universities, provided that they include a final exam, upon the approval by the Academic Board.

All PhD didactic activities are offered in videoconference mode and include a mandatory final exam which will be registered in ESSE3 student area.

PhD students are required to attend at least two interdisciplinary PhD office didactic activities www.unive.it/pag/7726/

3. **Seminars, Doctoral Schools, Workshops and active participation in Conferences**
The presentation of posters or oral communications at national and international conferences are considered training activities.

PhD students are required to attend at least **20 seminars** in the three years. The seminars will be held by external experts on topics of interest to the PhD Program and approved by the Steering Committee. The seminars are part of the training activities.

4. Doctoral students can carry out, subject to authorization from the Academic Board, **specialist tutoring activities** within the maximum limit of 90 hours in each academic year.

(www.unive.it/pag/8245/) and, as an integral part of training project, supplementary teaching activity or teaching assistance within the limit of 40 hours for each academic year (www.unive.it/pag/8256/) subject to authorization from Steering Committee;

5. **Stages**: PhD students are strongly encouraged to carry out part of the scientific program at other Italian or foreign institutions, preferably in the 2nd and 3rd year. The minimum recommended period for an internship abroad is 3 months.

Study and research periods in a foreign institution must be discussed with supervisor and authorised by the Steering Committee During the authorised period abroad, the scholarship is increased by 50%.

6. At the end of each year, usually in the month of July, an assessment of the research and training activities "**end-of-year exams**" is scheduled, consisting of a presentation in seminar form of the scientific activity that the PhD students hold in the presence of the Academic Board. PhD students are also required to submit a written report on their scientific, seminar and training activities, drawn up in accordance with the model provided, and a personal file showing the training activities carried out in the reference year. These documents remain on record in the secretariat. Admission to the following year and maintenance of the scholarship is subject to the approval of the Steering Committee (www.unive.it/pag/8256/).

7. At the end of the three-year PhD period, PhD students must have at least 1 **publication** with their first name, even in press. The Steering Committee will evaluate any special cases.

8. Doctoral students elect **two representatives** part in the sessions of the Aca- demic Board to deal only with teaching and organizational problems.

9. For all questions and problems which cannot be easily solved with the supervisors, the PhD students can contact the Ombudsman – difensore degli studenti e delle studentesse di dottorato, appointed by the Steering Committee: Prof. Salvatore Daniele e.mail sig@unive.it Room at second floor, Epsilon Building.

10. The PhD students are kindly invited to submit to the Steering Committee any feedback about the general organization through these two channels:

- Filling the feedback questionnaires on seminars and events, and the annual anonymous questionnaire about the organization of the PhD program. These Questionnaires will be sent at the appropriate time by the Secretariat.
- Directly to the Steering Committees through their representatives

Research areas at Department of Molecular Sciences and nanosystems

Please visit the page of the PhD website www.unive.it/web/en/15101/research.

Specific information on research topics and projects of the Department of Molecular Sciences and nanosystems can be found in the website at **www.unive.it/dep.dsmn> Research and www.unive.it/dsmn > Ricerca** [ITA]

Evaluation of the Thesis	**excellent**	**good**	**satisfactory**	**limited**
How original and timely is the research question of the thesis?				
How rigorous is the research methodology applied for the PhD thesis project?				
How interesting and well developed are the results and/or discussion sections of the thesis?				
How is the overall quality of the contribution in terms of existing research, academic relevance and debate?				
Presentation				
Oral presentation				
Competence in replying questions				
Overall Evaluation				

Recommendations for scientific reports:

- Do not exceed 3 pages
- Font size must not change along the text
- Figures, tables and graphs numbers must correspond when cited in the text.
- Figure, tables and graphs numbers have to appear in order as they are mentioned in the text;
- do not forget captions of Figure, tables and graphs!
- Graphics, rather than tables, should be preferred
- suggested template:
  - o PhD student name/surname
  - o supervisor & co-supervisors
  - o title
    - Introduction
    - Research goals
    - Methods
    - Results and discussion
    - Conclusions and future development
    - References
    - Papers, participation to Conferences and information about the research period abroad.

Facilities

E-mail account

once enrolled as a PhD student, you are part of Ca' Foscari University Venice, you will receive a studentnumber@unive.it email account: this is the only email address used by the Central Administration to communicate on an official basis with you;
After obtaining your Italian Fiscal Code, you are encouraged to apply for a name.surname@unive.it email. Please read here: www.unive.it/pag/11398 (ITA), www.unive.it/pag/36650 (ENG).
Once you have your name.surname@unive.it email address, you will be able to feed your personal webpage with your CV, publications and photo.
Every PhD student is required to register to ORCID (Open Researcher and Contributor ID) and regularly update his/her publications in the ARCA catalogue
ITA www.unive.it/pag/10391/
ENG www.unive.it/pag/40418/

PhD rooms at Department of Molecular Science and Nanosystems

PhD students have access to two rooms which are located on the 2nd and the 3rd floor of BETA Building, on the ground and 1st and 2nd floor of ETA Building, on the 4th and 6th floor of ALFA Building, and on the 2nd floor of Epsilon Building. PhD students are responsible for the good care of these premises. The last student who leaves the PhD room must check that all windows are closed, PCs and lights turned out. The rooms will be showed during the welcome day, on your very first day in DSMN.
If you need to carry out group work or you wish to discuss with your colleagues, you can use the lecture rooms "acquario" in ALFA Building, please ask to the Secretariat.

ICT Infrastructure, Pcs and Wi-Fi

See the following website for more information:
www.unive.it/pag/29847 (ITA)
www.unive.it/pag/39159 (ENG)

Libraries

Campus Scientific Library – BAS is situated in ALFA Building.
ITA www.unive.it/pag/4757
ENG www.unive.it/pag/40450/
You have access using your "multiservizi-card"/student card. If you need to access the library but you still do not have the card, you can ask the front desk personnel of the library for a temporary access card showing an identity document.

Online resources

Ca' Foscari students have access to the materials of the Ca' Foscari Digital Library, Electronic Journals Catalogue Data sets, Thesis archives, other catalogues and journals online. For more information please visit cerCa':
ITA: www.unive.it/pag/10527/
ENG:https://uve-iua-primo.hosted.exlibrisgroup.com/primo-explore/search?sortby=rank&vid=unive_new_ui&lang=en_US

Useful information

CA' FOSCARI WEBSITE (in english)
www.unive.it/pag/13526

INTERNATIONAL WELCOME DESK – FOR FOREIGN STUDENTS
www.unive.it/welcome

PHD OFFICE
www.unive.it/web/it/102/home [ITA]
www.www.unive.it/web/en/221/home [ENG]

POSTGRADUATE ADMINISTRATIVE OFFICE
www.unive.it/pag/10588 [ITA]
www.unive.it/pag/20069 [ENG]

HOUSING OFFICE AND CANTEENS
www.unive.it/pag/19768

MULTISERVICE CARD
www.unive.it/pag/16409

STAY, INSURANCE, TRASPORT
www.unive.it/pag/12525

Info about CRO

CRO is a Scientific Institute of Hospitalization and Care for oncological patients and is characterized as a translational health research center. It therefore pursues, according to the standard of excellence, research in the biomedical field and in the organization of health services, innovation in assistance models and knowledge transfer, together with high-level health services. In the mission of CRO is recognized a training for junior and senior scientists

Deputy-Director in CRO structures:

Flavio Rizzolio
Email: flavio.rizzolio@unive.it

Laboratories

Laboratories in CRO are equipped to train graduate students in advanced experimental studies in the various fields of biochemistry, molecular and cellular biology, translational and clinical medicine. Every single CRO laboratory is organized with basic and advanced equipment, organized in core facilities, such as genomics, proteomics, imaging, flow cytometry and animal facilities.
The access to the laboratories is strictly regulated. Under a dedicated agreement between Ca' Foscari University and CRO of Aviano, students can work in both Institutes after a specific authorization supervised by the head of the laboratory.

Accommodation

Since its foundation, the CRO was engaged in the field of advanced training of young graduate and post-doc researchers, becoming an important reference point that offers advances courses and up to date international seminars. In recent years, the CRO has been able to activate for young people about 150 scholarships and research contacts. To improve this sector and to give it new impetus, the "campus project" was launched, which offer a strategic logistic base. The guest house has three-levels floors with about 31 housing units for a total of about 60 beds of various shapes and sizes for researchers who will access the structure and large common areas both internal and external for various study activities.
Email: campus@cro.it

Library

The Library is specialized in oncology and related biomedical sciences. Since 1998, it is the first patient library in Italy. Recognized of regional interest for specialized services for patients and relatives. The library organized different activities: Theme meetings, Training courses, Workshops and conferences, Artistic and literary competition.
Opening hours: Monday to Friday 09.00 -17.00 Phone: +39 0434 659054
email: itruccolo@cro.it

International PhD with Kansai Medical University, Osaka

Biomedical research: a new hub brings together Venice and Osaka in an agreement between Ca' Foscari University and Kansai Medical University. The Double PHD programme between PhD in Engineering Physics and Materials at Università Ca' Foscari Venezia and Bioengineering and Medical Sciences at Kansai Medical University promotes cooperation among researchers and students conducting Biomedical research.
The Academic HUB will also foster connections between research and industry, as well as the clinical application of medical discoveries.
Please see the complete article at www.unive.it/web/en/15205/article/6517

Industrial PhD Programs

Industrial PhD Programs serve as powerful catalysts for economic development.
They represent a structured partnership between universities, companies, and startups, strategically forging robust networks and innovation clusters. This collaboration seamlessly aligns the academic landscape with the industry's needs and resources, creating a dynamic synergy. By providing doctoral students with a distinctive chance to acquire hands-on experience and contribute to research projects directly relevant to the industrial sector, these programs stand as a cornerstone for fostering both academic excellence and industrial advancement.

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