Master in Nanosciences and nanotechnologies

Soft Nano 2nd year

Presentation

The M2 track Soft-Nano is focused on soft and complex micro-nano-systems whose self-organization capabilities, fluctuating dynamics, and sometimes active properties, lead to specific and surprising effects at the nanoscale, and have enormous potential for innovation in materials science and engineering. This track provides a broad expertise in fundamental physics, mechanics, chemistry, and surfaces science as well as experimental skills with top-equipment and cutting-edge techniques for the characterization of soft nanostructures, still emphasizing the importance of numerical and modelling tools. It prepares to a career in fundamental research or R&D departments of industries. The broad scientific scope is appreciated in a wide range of industrial domains.

The curriculum contains:

- General courses including nanosciences and nanotechnologies specific to soft matter corresponding to 15 ECTS, among which 3 include the study of a foreign language
- Elective courses (totalizing 18 ECTS) for further specialization or opening in nanosciences
- Internships in research teams, 4 to 6 months (27 ECTS)

For more informations on this track

This track is opened to international students. All courses are given in english.

Registration and scholarships

Access conditions

National diploma conferring the degree of license in a field compatible with that of the master Title or acquired recognized equivalent by the admissions committee of the University of Grenoble Alpes

Public continuing education: You fall under continuing education:

- if you resume your studies after 2 years of interruption of studies
- or if you followed training under the continuing education regime in one of the previous 2 years or if you are an employee, job seeker, self-employed person

If you do not have the required diploma to integrate the training, you can undertake a process of validation of personal and professional achievements (VAPP)

For more information, see the web page of the Continuing Education and Learning Department

skin.odf-uga:SKIN_ODF_CONTENT_PROGRAM_CANDIDATURE_LABEL

Would you like to apply and register ? Be aware that the procedure differs depending on the diploma, the degree obtained, or the place of residence for foreign students. Let us guide you simply by following this link

Target group

Master 1 program in soft condensed matter or a 4 years bachelor program (e.g. at least 240 ECTS) in Physics, Physical chemistry, Materials Sciences, Chemical or mechanical Engineering

Expenses

Tuition fees 2023-2024 : 243 €+100€ CVEC

Further studies

This track offers two main perspectives:

- Continue with a PhD, in France or abroad. The interdisciplinar character of this track leads to a wide variety of domains of nanotechnologies in soft condensed matter from bio-oriented to microelectronics fields as for example innovative coatings, nano-droplets, soft interfaces...
- Become an engineer in a company or an organism, in wide-range of domains of nanotechnologies such as energy, formulation, recycling...

Practicals informations :

> Component : UFR PhITEM (physique, ingénierie, terre, environnement, mécanique), Grenoble INP, Institut d'ingénierie et de management - UGA, Grenoble INP - Phelma (Physique, électronique et matériaux), UGA
> level : Baccalaureate +5
> Duration : 1 year
> Course type : Initial and Continuing Education
> Location(s) : Grenoble - University campus

Contacts

Program director

Philippe PEYLA
philippe.peyla@univ-grenoble-alpes.fr

Administrative contact

Registrar's Office for the Master in Nanosciences and nanotechnologies
phitem.master.nano@univ-grenoble-alpes.fr

Application
phitem.candidature.etudiant@univ-grenoble-alpes.fr

Program

Master 2nd year

Semester 9

UE Out-of-equilibrium Statistical physics	3 ECTS
UE Complex fluids	3 ECTS
UE Large Scale Facilities for Soft Matter	3 ECTS
UE Adhesion, friction, nanomechanics	3 ECTS
UE International School in Soft Nanoscience (ESONN)	6 ECTS

1 option(s) to choose from 1

UE Introduction to Machine Learning and Deep Learning	3 ECTS
UE Discrete and continuous modelling	3 ECTS

The information contained in this document is for information purposes and is non-contractual. - Updated on 14 December 2023

1 option(s) to choose from 1

UE Research training	3 ECTS
UE Micro-nano fabrication techniques	3 ECTS
UE Advanced characterization for Nanostructures	3 ECTS

4 option(s) to choose from 4

UE Thematic school in soft condensed matter	3 ECTS
UE Nano-pores and membranes technologies	3 ECTS
UE Active matter	3 ECTS
UE Physics of biological systems	3 ECTS
UE Fundamentals of structural biology	3 ECTS
UE Nano-safety	3 ECTS
1 UE (6ETCS) OU 2 UE (2 UE de 3 ECTS) in an other program of the Nanosciences speciality or in another speciality	6 ECTS

Semester 10

UE Master Thesis	30 ECTS