UFR PhITEM
(physique, ingénierie, terre, environnement, mécanique)

Master Nanosciences et nanotechnologies

Parcours Research Intensive track 1re année

Présentation

This PhD-track program is dedicated to students having a 4-years Batchelor of Science and who wish to pursue their studies with a PhD in Nanosciences and Nanotechnologies.

The specificity of this track is an extended master thesis performed over the two years of the master, allowing the student to achieve a substantial research project.

The first year of the program contains:

- general courses corresponding to 6 ECTS, among which 3 credits of french language
- transverse courses in nanosciences and nanotechnologies (15 credits) with a large focus on experimental training in the cleanrooms and nanosciences facilities of the Grenoble area
- specialization courses in one of the 3 possible specialities, nano-physics, nano-chemistry, nano-biosciences
- a research project of 24 ECTS performed in a research institute during an internship extending over the entire school year.

In the second year, student join one of the specialization track in nano-physics, nano-chemistry or nano-biosciences, depending on the courses and the research subject that they have choosen in the first year.

Objectifs

The objective of the Research-Intensive Track is to offer a two year programme in Nanosciences and Nanotechnology for students who intend to pursue in PhD, with a master thesis extending over two years and allowing to achieve a substantial research project.

Admission

Entry in 1st year: Bachelor degree in Chemistry or Physics or equivalent degree.

Public continuing education : You report continuing education:
- if you resume your studies after 2 years of interruption of studies,
- or if you followed training under the continuous training regime one of the previous 2 years
- or if you are an employee, job seeker, self-employed.

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

For more information, visit the website of the Continuing Education and Learning Branch.

For applicants whose country of residence does not fall under the "Study Portal in France" (PEF), the schedule of the application campaigns for the eCandidat application is available here.

Infos pratiques :

> **Composante :** UFR PhITEM (physique, ingénierie, terre, environnement, mécanique)
> **Durée :** 1 an
> **Type de formation :** Formation initiale / continue
> **Lieu :** Grenoble - Domaine universitaire

UFR PhITEM
(physique, ingénierie, terre, environnement, mécanique)

> **Contacts :**

Responsable(s) pédagogique(s)

Elisabeth Charlaix
Elisabeth.Charlaix@univ-grenoble-alpes.fr

Secrétariat de scolarité

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

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

Programme

Master 1re année

Semestre 7

UE Surfaces and interfaces	3 ECTS	24h
UE Phase Transitions, transport and fluctuations	3 ECTS	24h
UE Practicals in Nanosciences	3 ECTS	26h
UE Research Project	6 ECTS	
1 élément(s) au choix parmi 2		
UE Insertion professionnelle	3 ECTS	24h
UE Français Langue Etrangère (FLE)	3 ECTS	
2 élément(s) au choix parmi 13		
UE From solution to solid	6 ECTS	50,5h
UE Coordination and supramolecular chemistry	6 ECTS	50,5h
UE Quantum physics	3 ECTS	24h
UE Solid state, electrons and phonons	3 ECTS	27h
UE Micro and nanofluidics	3 ECTS	24h
UE Mathematics for Biology	3 ECTS	24h
UE Physics and electricity for biology	6 ECTS	48h
UE Molecular biology	6 ECTS	48h
UE Semi-conductors physics	3 ECTS	26h
UE Electromagnetism	3 ECTS	26h
UE Scientific softwares	3 ECTS	34,5h
UE Optical spectroscopy	3 ECTS	22h
UEs au choix dans la mention ou UE Phelma 6 ECTS		

Semestre 8

UE Nanosciences	6 ECTS	50h
UE Stage de recherche	6 ECTS	
UE Research Intensive Track Internship	9 ECTS	
2 élément(s) au choix parmi 7		
UE Mechanics at the micro & nano-scale	3 ECTS	24h
UE Nanophysics with local probes	3 ECTS	27h
UE Electrochemistry and molecular photophysics	6 ECTS	49,5h
UE Optic and magnetic spectroscopies	3 ECTS	25h
UE Physics of the colloidal domain	6 ECTS	48h
UE FLE	3 ECTS	
1 à 3 Ues à choix dans la mention ou UE de Phelma pour un maximum de 9 ECTS		