UNIVERSITÉ Grenoble Alpes

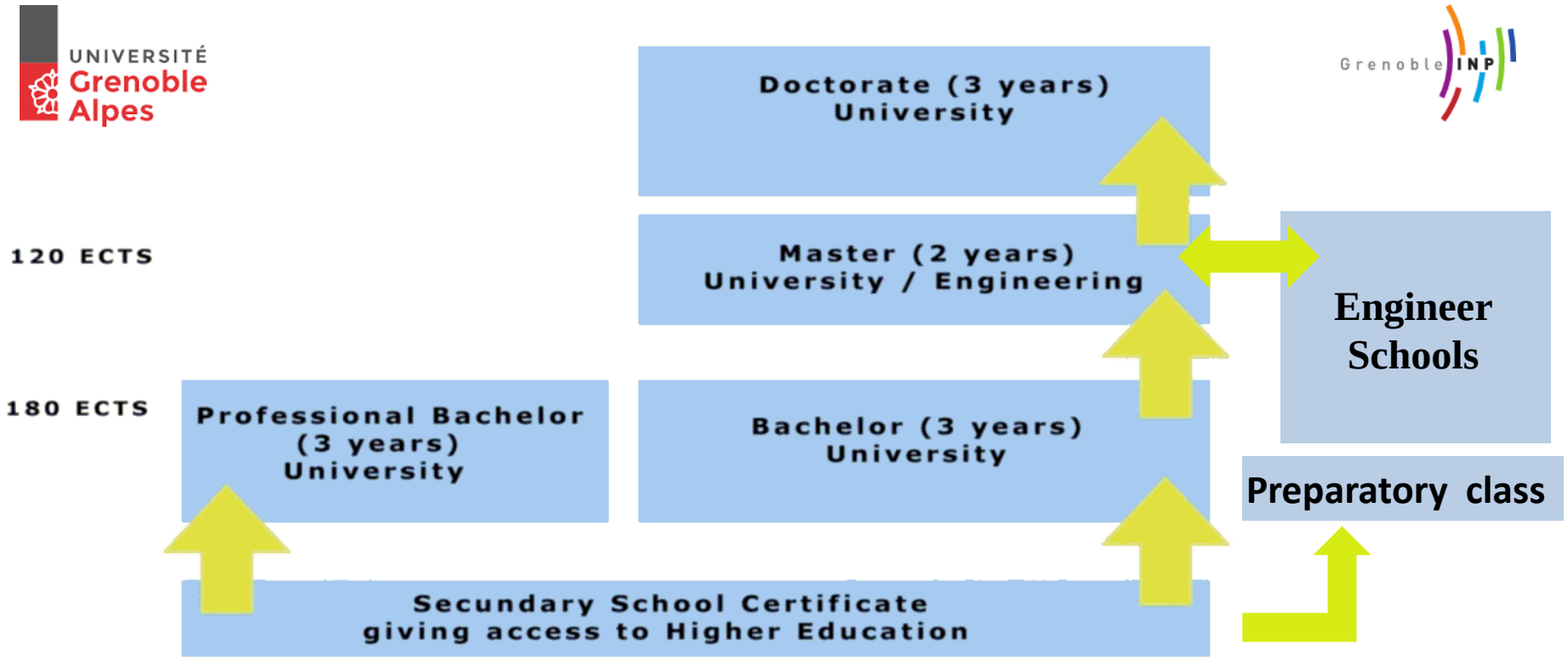
Master programs in physics and Nanoscience – international exchanges

Web sites: https://master-physique.univ-grenoble-alpes.fr/
https://master-nanosciences.univ-grenoble-alpes.fr/

Contact: david.ferrand@neel.cnrs.fr

http://www.univ-grenoble-alpes.fr

French academic system



UFR Phitem: Physics, Engineering, Earth, Environnement, Mechanics
https://phitem.univ-grenoble-alpes.fr/ (french web site)

International exchange: Ingo Schienbein
schien@lpsc.in2p3.fr

Phelma: School of engineering in Physics, Applied Physics, Electronics & Materials Science
http://phelma.grenoble-inp.fr/en

International exchange: Davide Bucci
davide.bucci@phelma.grenoble-inp.fr

Master programs at Phitem: « Mention physics »

Head: Prof J. Ferreira
Web site: https://master-physique.univ-grenoble-alpes.fr/ (french web site)

Master 1: 2 main specialties « Fundamental research » and « research and innovation »
2 semester of courses + 8/10 weeks of internship

Master 2: 5 Fundamental research tracks 4 Research and innovation tracks
1 semester of courses + 4 months internship (paid 600 €/month)

Spanish students with a 4 year Bsc can apply to M2 !

- Subatomic physics and cosmology
- Astrophysics
- Quantum matter
- Complex matter living matter **(international)**
- Nanophysics - Quantum engineering **(International)**

- Materials and energy (Phitem and Phelma)
- Nuclear physics and energy (Phitem and Phelma)
- Photonic and semiconductors (Phitem and Phelma)
- Marketing techniques in optics

financed by IDEX Université Grenoble Alpes

Quantum Engineering
Univ. Grenoble Alpes

https://quantum.univ-grenoble-alpes.fr/quantum-engineering

(online applications from February to May)

Master programs at Phitem: « Mention Nanoscience »

Head: Prof C. Train
Web site: https://master-nanosciences.univ-grenoble-alpes.fr/

nano SCIENCES
FONDATION sous l'égide de la Fondation Université Grenoble Alpes
www.fondation-nanosciences.fr

Master 1 : 3 course programs: Nanophysics, Nanochemistry and Biophysics

2 semester of courses + 8/10 weeks of internship

Master 2: 4 international research tracks + 1 professional track

1 semester of courses + 4/6 months internship (paid 600 €/month, possible abroad,)

Nanophysics	Nanochemistry	Nanobiotechnology	Nanomedicine
condensed matter and soft matter	Material engineering	Phitem and Phelma	Medical imaging (phelma)

Micro-nano technologies (french M1 required, french courses)

Fully international master program (english courses)

- Double diploma with Tsukuba University.
- EMM Nano+ Erasmus-mundus consortium
  KU-Leuven, Chalmers Goteborg, TU Dresden, UB-Barcelona and UGA.

Spanish students with a 4 year Bsc can apply to M2 !

(online applications from February to May)

Master programs at UGA: Erasmus-mundus EMM Nano+ Master program

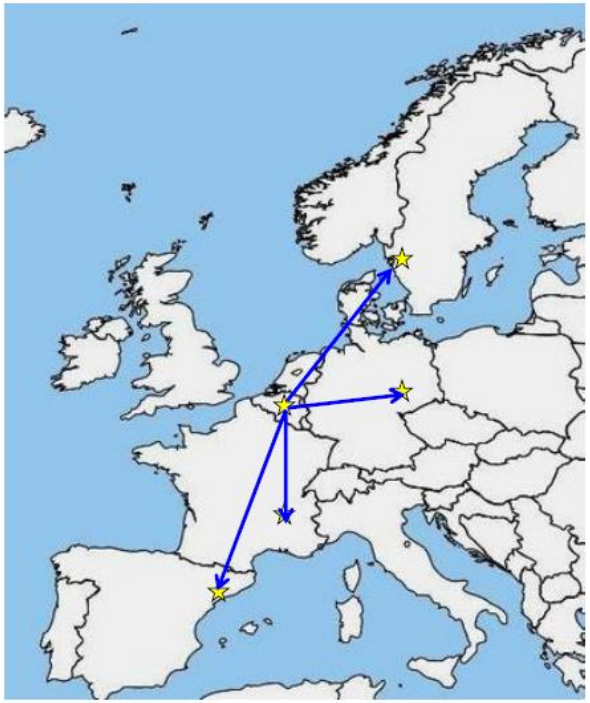
Erasmus+

EMM NANO +
Erasmus Mundus

- 2-year master programme
- 5 European Universities
  - K.U. Leuven (BE) - coord
  - Dresden University of Technology (DE)
  - University Grenoble Alpes (FR)
  - Chalmers University of Technology, Goeteborg(SE)
  - Universitat Barcelona (SP)

- First year in KUL
  - Common courses + some specialized electives
- Second year in any of the other 3 HEIS (5 different specialisations)
  - Compulsory specialisation courses
  - Broadening electives
  - Final thesis research project

Award of a joint degree to all successful students
Scholarships available for top students !



KU LEUVEN — Pr. B. Soree

Technische Universität Dresden — Pr. G. Cunniberti

Chalmers Tekniska Högskola — Pr. T. Bauch

Université Grenoble Alpes — Pr. D. Ferrand

Universitat de Barcelona — Pr. S. Hernandez, Pr A. Romano

Consortium built in 2005, UGA joined the program in 2010, UB in 2018.

Web sites: http://www.emm-nano.org/ https://master-nanosciences.univ-grenoble-alpes.fr/

Master programs at UGA: Erasmus-mundus EMM Nano+ Master program

Erasmus Mundus Master Nanoscience and nanotechnology (120 stp)

Nanoscience and nanotechnology fundamentals (0-12 ects, KU Leuven)

Quantum physics - 3 ects
Semconductor physics - 3 ects
Semiconductor devices - 3 ects
Atomtheory, chemical periodicity and chemical bond - 3 ects
Structure synthesis and cellular function of macromolecules - 3 ects
Electronic components, circuits and sensors - 3 ects
Basics of Pharmacology - 3 ects

General interest courses (6-9 ects, KU Leuven)

Courses chosen from an extensive list of general interest courses

Core courses (36 stp, KU Leuven)

Material physics and technology for nanoelectronics - 6 ects
Nanostructured biomacromolecules - 6 ects
Chemistry at nanometer scale - 6 ects
Technology of integrated systems - 6 ects
Mesoscopic physics - 3 ects
Lectures on nanoscience and nanotechnology - 3 ects
Practical design for nanotechnology or Project work nanoscience - 6 ects

Nanomaterials and nanochemistry		Quantum computing and nanoelectronics				Bionanotechnology and Nanomedicine		
Option Nanomaterials U Barcelona	Option Nanochemistry UGA Grenoble	Option Organic and molecular electronics TU Dresden, Chalmers	Option Quantum computing Chalmers	Option Quantum and nanoscale engineering UGA Grenoble	Option Nanoelectronics TU Dresden	Option Biophysics TU Dresden	Option Bionanotechnology JFU Grenoble	Option Nanopharmacotherapy U Barcelona
Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven	Specific Courses 15 ects compulsory + min 6 ects electives KU	Specific Courses 15 ects compulsory + min 6 ects electives KU Leuven
Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives	Broadening courses 15 ects electives
Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)	Master thesis (30 ects)

UB **UGA** **UGA** **UGA** **UB**

Web sites: http://www.emm-nano.org/ https://master-nanosciences.univ-grenoble-alpes.fr/

International exchanges with Barcelona

- Student mobility via the Erasmus+ exchange program (Bsc and master):
  Contact: Ingo Schienbien (schien@lpsc.in2p3.fr) & D. Moukadem (dounia.moukadem@univ-grenoble-alpes.fr)

  - **UGA –UAB**: 2 agreements: physics and geology valid until 2020-2021.
    2 student exchanges for a mobility period of 5 months (both directions).

  - **UGA-UB**: 1 agreement in physics valid until 2020-2021.
    2 student exchanges for a mobility period of 10 months (both directions).

  - **UGA- UPC**: 1 agreement in civil engineering valid until 2020-2021.
    1 student exchange for a mobility period of 10 months (both directions).
    (+ possible agreements with Grenoble-INP).

  See UGA exchange portal : https://uga.moveonfr.com/publisher/1/fra (french web site)

- IDEX Master scholarships:
  Applications to Master 1 or Master 2 (mention physics and Nanoscience)
  Contact: C. Geindreau (christian.geindreau@3sr-grenoble.fr) and track coordinators (see web sites)

  - **UB and UPC are included in the strategic partner list** of UGA. UAB students can apply as regular students
  - Supports: 8000 Euros for Master 1, 5000 Euros for Master 2 (academic selection criteria).

  https://www.communaute-univ-grenoble-alpes.fr/fr/presentation/le-projet-idex/appels-a-projets-idex/call-for-applications-master-scholarships-session-2019-2020-734449.htm

- « Graduate school » on quantum materials-quantum engineering in preparation.
  Look for new international exchanges with Partner Universities.