

# Bachelor in Nuclear Engineering



## PRESENTATION

The international Bachelor in Nuclear Engineering is a one year program designed for two types of students: those who have finished a three year Bachelor's degree and want to acquire a specialization in nuclear engineering or those pursuing a four year degree and want to do their last year in a highly specialized environment dedicated to nuclear engineering. In either case, upon completion of the program, students will be granted a diploma from the Grenoble INP - Phelma, UGA Engineering school. The program is based on series of interdisciplinary and nuclear specific courses divided into six modules called "interaction of radiation with matter", "reactor physics and nuclear engineering", "thermodynamics and transfers", "applied mathematics", "foreign languages" and "research project" and it prepares students to be able to perform competently in occupational areas such as reactor operations, health physics, quality assurance, instrumentation and control technology, as well as in related areas in the nuclear technology field.

## INDUSTRIAL SECTORS

Obtaining a diploma in Bachelor of Nuclear Engineering may be a first step towards a promising future career. The students will qualify (often after completing a Master of Science in Nuclear Engineering and, if need be, after obtaining a PhD degree) for an interesting, multidisciplinary profession with excellent job opportunities in industry, research and national authorities. Tasks that are on the agenda - like the safe and reliable operation of existing and new reactors, the development of novel reactor types, the sustainable supply of nuclear fuel, the closure of the fuel cycle, the disposal of radioactive waste without harm to the environment, and many others - represent scientific and technical challenges for motivated young engineers and researchers.

## RESEARCH

There are many opportunities to perform research internships thanks to a very high density of academic laboratories in the Grenoble area, such as LPSC, SIMAP, LEPMI and others. Professors involved in the bachelor program are themselves active researchers and help students to find stimulating research projects. As an example, the group of nuclear reactors of the same laboratory has an expertise in molten salt reactors, nuclear data, thorium, and accelerator driven systems. The SIMAP laboratory ([www.simap.grenoble-inp.fr](http://www.simap.grenoble-inp.fr)) is involved in multiscale modelling of irradiation defects in materials and studies behavior of materials for fission reactors and ITER. The LEPMI laboratory ([www.lepmi.grenoble-inp.fr](http://www.lepmi.grenoble-inp.fr)) focuses on problems related to fluid dynamics, corrosion, etc.

# ASSETS

- All courses are given in English in an international environment.
- Courses are strongly oriented to problem solving and team work.
- All professors are active researchers at the LPSC or other laboratories.
- Students will have a high-level qualification, which enables them to enroll and successfully continue their studies in the Master programs.



## PRESS RANKINGS



### Shanghai

Since 2020, Grenoble INP - UGA has contributed to the international ranking of the University of Grenoble Alpes

### Shanghai Global 2022

Grenoble Alpes University ranked among the 150 best universities in the world and in the top 5 of French universities.



### QS 2023 ranking by theme: Grenoble INP - UGA makes good progress in the field of engineering and technology

Grenoble INP - UGA has made good progress in the overall field of "engineering and technology", moving up 74 places to 93rd position worldwide and 5th position in France, making it the leading institution outside the Paris region.

The institute has made eight appearances in this ranking.



Grenoble INP - UGA leader in 2 lists from Reuters Ranking 2019

### Most innovative universities in Europe

- 2<sup>nd</sup> of the French Engineering Schools
- 13<sup>th</sup> in France

Grenoble INP - Phelma, UGA is the school for scientific diversity. It offers its students courses in various fields with a promising future:

- **Microelectronics and nano-technologies** (electronics, nanosciences, materials, health),
- **Decarbonated energy** (nuclear energy, photovoltaic, electrochemical storage),
- **Information technology** (digital communication, image and signal processing, telecommunications, computing and networks, Internet of Things, artificial intelligence),
- **Innovative materials** (for aeronautics, automobiles, sport & leisure, health, microelectronics, energy),
- **Biotechnology and biomedical engineering** (medical imagery and therapy, implantable devices),
- **Sustainable development** (decarbonated energies, eco-processes, recycling, material durability, energy management, natural signal analysis).

Based in Grenoble in the heart of the French Rhône Alpes region, Phelma boasts a rich academic and industrial infrastructure. As the only teaching institute on the Minatec innovation campus, Phelma benefits from an exceptional Training / Research / Industry synergy.



1,400 students  
+ 380 Engineering graduates a year  
More than 25% of engineering  
graduates go on to complete a thesis

110 permanent teacher-researchers from  
11 laboratories associated with the school  
Approximately 370 stakeholders from industry  
and research

## CONTACT

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