Grenoble INP phelma

# 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 Engineering school. The program is based on series of interdisciplinary and nuclear specific courses divided in three modules nuclear sciences (interaction of radiation with matter, nuclear reactors, nuclear instrumentation etc.) engineering sciences (mathematics, thermodynamics, heat transfer etc.) and languages/sports 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 structure at the LPSC laboratory (**www.lpsc.in2p3.fr**) is working on experimental and theoretical nuclear structure problems, 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**) 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**) focuses on problems related to fluid dynamics, corrosion...

## 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

## CONTACT

**RespBachelor@phelma.grenoble-inp.fr**

Grenoble INP - Phelma
Minatec - 3 Parvis Louis Néel
CS 50257 - 38016 Grenoble Cedex 01 - France

**http://phelma.grenoble-inp.fr**

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Grenoble INP - Phelma is the school for scientific diversity. It offers its students courses in various fields with a promising future: **micro and nano-technologies** (micro / nano-electronics, nano-sciences, materials, health, building, etc.), **energy** (nuclear energy, renewable energies, accumulators, etc.), **innovative materials** (for aeronautics, automobiles, sport & leisures, health, microelectronics, energy, etc.), **information technology** (digital technologies, image and signal processing, telecommunications, computer science & networks, embedded softwares, etc.), **biomedical engineering** (medical imagery and therapy, implantable devices, etc.) and the **environment** (eco-processes, energy management, natural signal analysis, etc.).

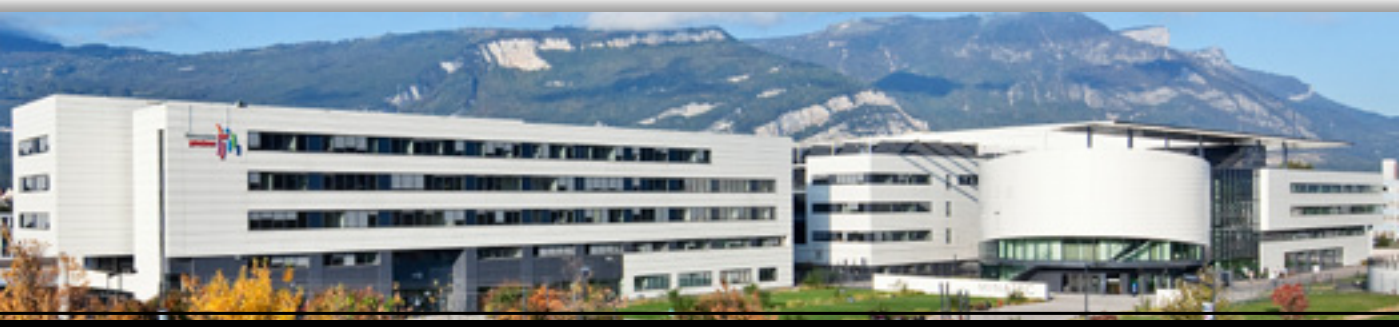
Based in Grenoble in the heart of the French Rhône Alpes region, Phelma boasts a rich academic and industrial infrastructure. As the only teaching institute on the Minatec innovation campus, Phelma benefits from an exceptional Training / Research / Industry synergy.

**Key figures**: more than 1,200 students, plus 300 engineering graduates a year, 160 permanent research lecturers from the school's thirteen partner laboratories, 270 speakers from industry and the world of research, plus 25% of engineering students studying for doctorates.

## PRESS RANKINGS

Grenoble INP, leader in 2 lists from QS World University Rankings Engineering & Technology 2014

Grenoble INP ranked 2nd by L'Usine Nouvelle among the 100 best french engineering schools in 2014

Grenoble INP ranked 1st by « Industrie et Technologies » in 2013

Grenoble, ranked 5th World's most inventive city by Forbes in 2013