



Master of engineering in

## Biomedical Engineering

### PRESENTATION

Biomedical Engineering at Grenoble INP - Phelma provides integrated training to form engineers that are able to apply engineering concepts and technology to the modern challenges in biology and medicine. We offer two speciality tracks: “**Medical Imaging and Nanomedicine**” and “**Nanobiology and Medical Devices**”. Building on a solid curriculum in physics, mathematics, electronics and instrumentation, students will be trained in biology and medicine to be able to develop strong interdisciplinary skills. Emphasis is put on practical training and most theoretical courses are coupled with wet-lab, programming or clean-room practicals. All courses and practicals can be taught in English. Teachers include professionals from associated research labs, medical hospitals and biomedical companies. The curriculum includes two internships (10 weeks and 6 months,) during which the students work fulltime, either in industry or in a hospital or academic research facility. Students will receive an Engineer Degree (Eq Master 2) from the Grenoble Institute of Technology - Phelma or they can also do a double degree Engineer & Master.



### INDUSTRIAL SECTORS

Phelma Biomedical engineers have career options in a wide variety of sectors of the healthcare and medical device industry as well as in biomedical research. The “**Medical Imaging and Therapy**” speciality focuses on design and innovation in different imaging techniques and radiotherapy, including the development of image processing and analysis. The “**Nanobiology and Medical Devices**” speciality trains engineers to create new biomaterials for tissue engineering, innovative molecular markers for biology and diagnosis and miniaturized devices in contact with the living matter. Career opportunities can be found in research & development, production, quality control, maintenance, sales and marketing. Typically 30 % of Phelma Biomedical Engineers do a PhD.

## ENVIRONMENT

Biomedical engineering at Phelma is strongly associated with the Grenoble INP research labs LMGP, GIPSA Lab and G2ELab within Grenoble's very dense and active industrial and research network in biomedicine. Emerging start-up companies (CYTOO, PX'Therapeutics, Fluoptics etc), multinationals (BioMérieux, Becton Dickinson etc) and public university and research centres (CEA, Grenoble Institute of Neurosciences, Institute of Structural Biology, etc) as well as major European research institutes (ESRF, ILL, EMBL) are located in Grenoble. A unique biomedical-technology platform, Clinatéc, has been created where novel technical solutions for neuroprosthesis and neurostimulation can directly be tested on patients. Outstanding internship and career opportunities are available within this local network.



## ASSETS

Biomedical engineering at Phelma thrives at training students by providing a maximum of experimental and project work in close contact with local researchers. Clean room and molecular and cell biology platforms (CIME Nanotech) provide access to state-of-the-art technical equipment allowing students to train in research conditions. Collaborations with professionals from local industry, research and medical institutions are actively encouraged by invited lectures, seminars and on-site visits so as to facilitate direct contact with the students. Coming to Grenoble is an unique opportunity to start a career at the frontier of physics, chemistry and biology.

## CONTACT

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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 Minatéc innovation campus, Phelma benefits from an exceptional Training / Research / Industry synergy.

**Key figures:** more than 1,200 students, plus 300 engineering graduates a year, 150 permanent research lecturers from the school's thirteen partner laboratories, 200 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 1st by « Industrie et Technologies » in 2013



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



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

