



Master of engineering in

Integrated Electronic Systems

PRESENTATION

This program addresses the most up-to-date topics: SW and HW architectures of embedded systems, Systems on Chip (SoC), Digital and analog microelectronic circuits, Radio Frequency (RF) design, Optoelectronics and microwaves. Students are trained in specification, design, validation and experimentation on the last micro and nanoelectronic technologies. Students choose between a **digital and an analog design** project of 56h during their first year, and between either the **Integrated Systems for RF and optoelectronics option**, or the **SoC option** during their second year. The last semester is dedicated to the End of Studies Project in research laboratories or in an industry, they are required to produce a report. The students get a master at the end of the program.



INDUSTRIAL SECTORS

The students may find jobs as an engineer or a researcher in large consortiums or in SME (Thales, Alcatel, Schneider, General Electric, Siemens, EADS, Safran, ST-Microelectronics, ATMEL, CEA, Thomson, ST Ericsson, Nokia, AMD...) or in academia.

The jobs are in:

- **Systems in Multimedia and Mobile applications:** smart phone, camera, HDTV, GPS and movement detection, Bluetooth communications, Smart card secure chips,...
- **Automotive, avionic, space:** Measures of mission real time parameters and functions, data communications, security and reliability,...
- **Integrated solutions for Bio-chips:** physiological, viral, measures, prosthesis, picture camera and video, movement detection, remote information processing, wireless communications for sensitive data, security,...

RESEARCH

The teachers in these program are mostly researchers of labs in Grenoble : IMEP-LAHC, TIMA, LCIS, GIPSA-Lab. This geographical proximity between the school and the research labs, allows to propose **research projects** to students during the first year of the program (e.g. asynchronous FPGA). These projects may lead to internship in lab during the summer. In the second year, students may also choose an internship in a research lab.

ASSETS

The students are trained on up-to-date platforms in the CIME Nanotech. The CIME Nanotech is a teaching and research center of 8 platforms in area of excellence: **Design and Test, Clean Room, Electrical Characterization, Nano Characterisation, Communicating Objects, Hyper Frequencies and Optical Wave guides, Biotechnology, Microsystems**. For instance, the students can use most of the industrial tools of CAD on the Design and Test platform. These platforms allow the newly graduate to be directly operational in the industry. The Integrated Electronic Systems department has several dual master agreements with Karlsruhe, Stockholm, Barcelone, Politecnico de Torino, Linköping, Porto Alegre, San Paolo and some exchange agreements with Argentina, Chili...



CONTACT

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<http://phelma.grenoble-inp.fr>

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, 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

