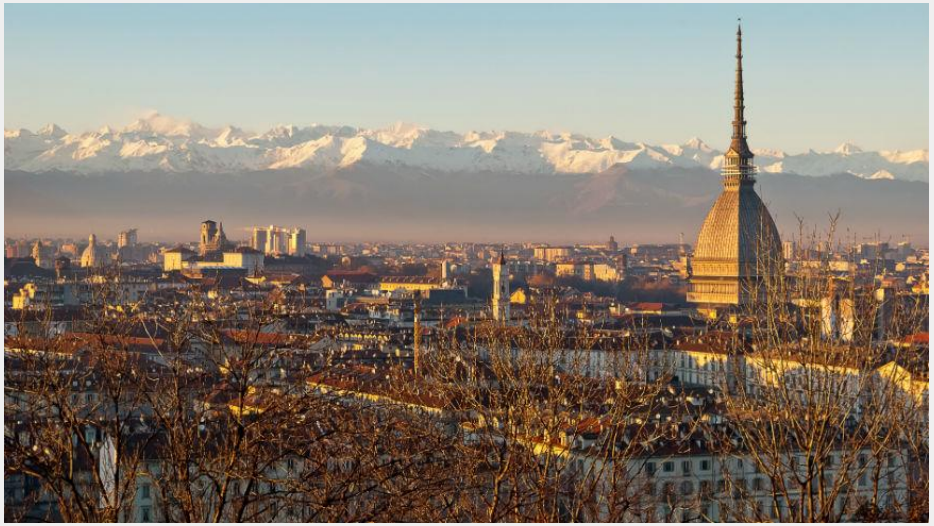
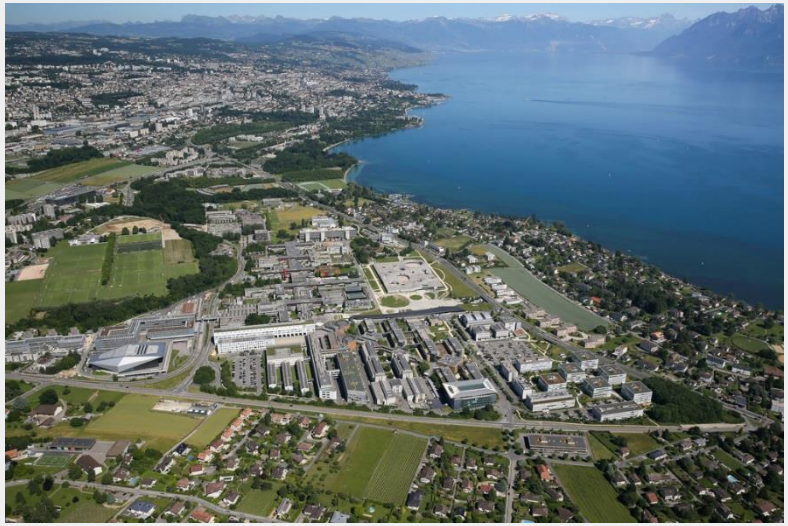
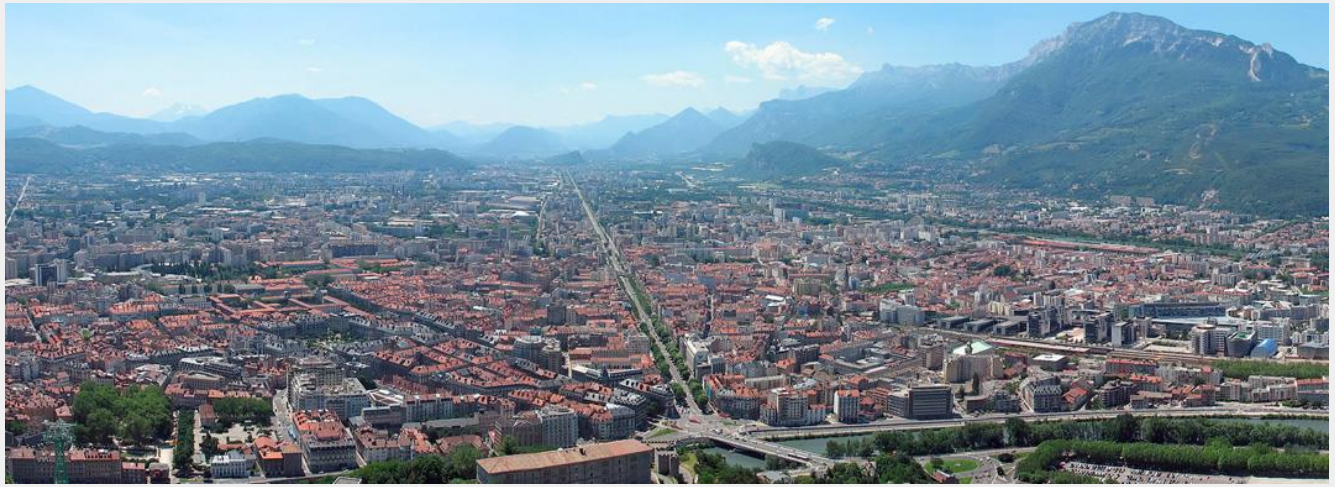
Master in Micro and Nano Integrated Systems

by Prof. Andy Burg







MNIS at EPFL : A Strategic Program

Master

Microsystems

Micro-nanotecnologies

Circuit and System Design

2 year Joint Master

Unique mobility program in Europe

Electronics, Signal Processing, Informatics, Automatic Control, etc.

Basic Sciences

3 year Bachelor EL- MT-PH

MNIS courses at EPFL

- Block 1 (**20 ECTS**)
  - Design Technologies for Integrated Systems (De Micheli) **6 ECTS**
  - Fundamental of VLSI design (A. Burg) **6 ECTS**
  - Digital Systems Design (A. Burg) **4 ECTS**
  - Analog IC Design II (for MNIS) **4 ECTS**

- Block 2 (**6 ECTS**)
  - Nanoelectronics (M. A. Ionescu) **2 ECTS**
  - Physical Models for Micro and Nanosystems (A. Kis) **2 ECTS**
  - Test of VLSI Systems (A. Schmid) **2 ECTS**

- Group 1 (**4 ECTS**)
  - Optional courses **4 ECTS**

MNIS Optional Courses

♦ Fundamentals of biosensors and electronic biochips	**3 ECTS**
♦ Advanced A/MS VLSI: A-to-D Converter (not given in 2024)	**2 ECTS**
♦ Mathematics of data: from theory to computation	**6 ECTS**
♦ Optical communications	**3 ECTS**
♦ Optical detectors	**3 ECTS**
♦ Semiconductor devices I	**4 ECTS**
♦ Seminar in physiology and instrumentation	**2 ECTS**
♦ Wireless receivers: algorithms and architectures	**4 ECTS**
♦ Radio Frequency Circuit Design Techniques	**4 ECTS**

Options outside this list must be aligned with the MNIS program focus and must be approved by the section

Email to **both**: andreas.burg@epfl.ch and philippe.gay-balmaz@epfl.ch

Masters Thesis in Industry or in Research

- Master thesis values 30 ECT credits
- Master thesis duration is 6 months
- Choice between industrial or research experience
  - Do your Master Thesis in industry
  - **Gain research experience in a lab during a 6 months master thesis in either of the three institutions or in other academic surrounding.**

Thank you for your attention!