

Living in Grenoble

Grenoble is located at the foot of the Alps and stands at the hub of technological research, where its many students are busy building towards the future - on cultural foundations that date back over two millennia.

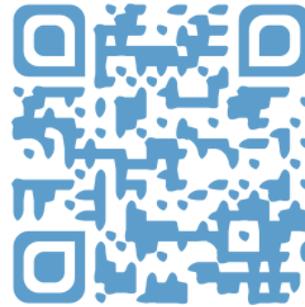
You will find many ways to spend your spare time in Grenoble. You will have the opportunity to discover the surrounding mountains, covered with snow throughout winter (ski resorts are only thirty minutes away by bus!). Spring time and fall are perfect for long walks in the forests and for mountain climbing. Summer is warm! Swimming pools and lakes are perfect for relaxing.

Grenoble is a nice, human-sized town. You will enjoy walks in the old city center... And don't forget the modern art museum!



MiSCIT

Master in Systems, Control and
Information Technologies



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International Master 2 in SYSTEMS, CONTROL AND INFORMATION TECHNOLOGIES



www.gipsa-lab.fr/MiSCIT/



Systems, Control and IT

Control and information technology are increasingly used in the design and operation of modern engineering systems. The pervasive infiltration of computer systems (embedded intelligence and networks) in engineered products and in society requires new insights and ideas in engineering research, education and entrepreneurship. A model-based system integration methodology combined with an overall emphasis on compositional design then appears as a crucial issue in modern process automation and research in automatic control.

The MISCIT curriculum consequently includes advanced topics in modeling, optimization, automatic control and dedicated methodologies (e.g. for data assimilation, nonlinear control, networks security, supervision, embedded control . . .) and numerous challenging applications (e.g. thermal fusion, car engines, ventilation systems, climate change . . .). Our aim is to provide a high level of knowledge and skills for research and developments in process modeling and control, from the latest theories to their applications.

Toward research and industry

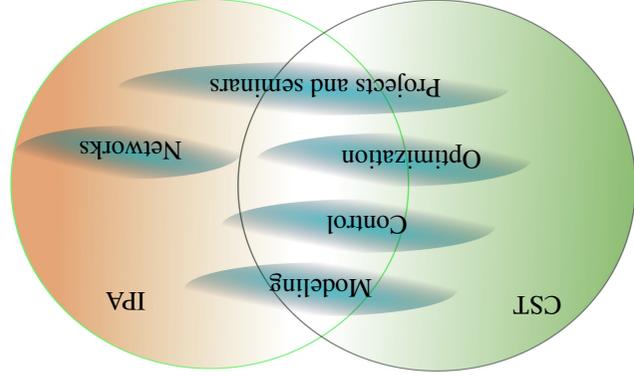
A choice between two specialties is offered:

- **Industrial Processes Automation (IPA)** aims at an engineer career or applied research, with a focus on automation-oriented topics (networks, real-time implementation...), labs, team working and communication, technological innovation and the adaptability to new environments.

- **Control and Systems Theory (CST)** is oriented toward theoretical research, with advanced courses in feedback control and in applied mathematics, the development of analytical skills and independent working capabilities.

The classes are in English and organized in two semesters:

- *September to December*: theoretical classes and labs.
- *January to June*: design project, seminars (January) and industrial or research internship (5 months).



Classes and targeted skills

Shared classes (18 ECTS)

- Multi-objective control
- Modeling for control and system identification
- Discrete event systems
- Public speaking or french
- Project management, seminars and project

IPA specific classes (18 ECTS)

- Embedded control, labview and modeling labs
- Communication systems
- Safety, supervision and diagnosis
- Network applications

CST specific classes (18 ECTS)

- Nonlinear and predictive control
- Modeling and control of partial differential equations
- Introduction to data assimilation
- Efficient methods in optimization

Master thesis (24 ECTS)

From a 5 months internship in a company or a research lab.

Admission requirements and tuition fee

The prospective student should:

- hold a MI (EU), bachelor (US) or equivalent degree in Science or Engineering, obtained after four full years of University studies
- have followed basic classes in Automatic Control
- prove an English proficiency with CEFR (B2), TOEFL (IBT 87-109), IELTS (5.5-6.5), TOEIC (785-945) or equivalent

Professional experience and reference letters are also key issues in the applications evaluation.

Most of the tuition fee - approximately 6000 €- is funded directly by the French Higher Education Department. See the University website for more details on the tuition.

Université de Grenoble

Université de Grenoble (UG) is one of Europe's leading universities. It offers its students high-quality education, providing them with a passport to the professional world.

Our university has acquired this international status through the quality of its teaching and the excellence of its research, much of which takes place in collaboration with major international and national organizations. Moreover, the attractive environment of the university city at the gateway to the Alps, with its large scientific community, has encouraged many international companies to move here. Our priority is to expand our scientific disciplines in order to foster innovation.

UG has also become increasingly involved in the development and transfer of new technologies and in supporting research projects right through to the stage when they begin to provide economic benefits. Through its research and teaching activities, UG is striving to meet the current needs of society, whether in respect of students' professional careers, lifelong learning, the production and dissemination of scientific knowledge or the creation of wealth and employment.