



International Master's program

# SCCI

## Master in Security, Cryptology and Coding of Information Systems



*English language track of the master's degree in Applied Mathematics and Informatics*

*joint program between Université Joseph Fourier (UJF) UFR IM<sup>2</sup>AG and Grenoble INP Ensimag*

With the increasing externalization of corporations and organizations in a global multimedia and interconnected world, security of information systems and integration of data protection technologies are among the most critical issues. Yet, security of Information Systems is an active field of research.

Especially, within the University Grenoble Alpes, the Grenoble technopole gathers experts in Informatics, Mathematics and Electronics from both Grenoble INP (Institut polytechnique de Grenoble) and UJF (Université Joseph Fourier), in the field of Information Systems and Security at an international level.

SCCI website

<http://scci.imag.fr>

[scci@imag.fr](mailto:scci@imag.fr)

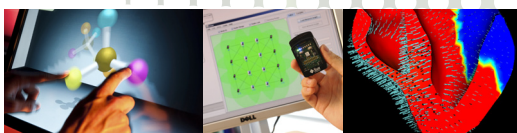
## ↘ Objective

**Educating experts in security and coding technologies**

Cryptology: Mathematical Protocols (RSA, AES, ECC, coding, FHE)

Security: Software/hardware (Network, System, Integration)

Applications: Watermarking, Multimedia, Smartcard...





## Master of Science in Informatics of Grenoble (Mosig M1)

Students can perform the first year of the graduate program in the framework of MoSIG Master 1

<http://mosig.imag.fr/ProgramEn>

### ↘ M2P

Lectures from September to March  
Project from April to September

#### Common core: Cryptology and Security [15 ECTS]

- Security Models
- Symmetric and Asymmetric Cryptology-PKI Infrastructures
- System Administration and Network Security
- English or French

#### Elective specialization [12 ECTS] : choose one between

- Security of Information Systems [12 ECTS]
  - Advanced System and Network Security
  - Secure Hardware Architecture
  - Distributed Algorithms and Fault-tolerance
  - Secure Infrastructure Deployment project
- Cryptology, Coding and Multimedia Applications [12 ECTS]
  - Advanced Cryptology
  - Multimedia Applications, Watermarking
  - Coding and Fault-tolerance

#### Elective course unit [3 ECTS] : choose one between

Smart Card Security; Audit and Normalization [3 ECTS]

New trends in Cryptology [3 ECTS]

#### Master thesis [27 ECTS]

## ↘ Academic program

The Master SCCI is a one-year (M2) specialization program with two elective tracks, one directed towards research (track M2R), the other towards industries (track M2P). To enter the program, students are selected after successful completion of: either the MoSIG first year program (M1) that includes an elective module in Introduction to Cryptology and Security or alternatively an equivalent M1 program.

The academic program proposes common core courses in Security and Cryptology and optional courses in the following fields:

- Advanced Engineering in Information Systems
- Cryptology : Advanced Protocols and Attacks
- Embedded Circuit Synthesis and Crypto-processors.

## ↘ M2R

Lectures from September to January  
Project from February to June

- **Common core: Cryptology and Security**

Security Models (6)

Symmetric and Asymmetric Cryptology- PKI Infrastructures (6)

Security of Computer: Systems and Networks (6)

System Administration and Network Security

Advanced Security of Systems and Networks

Advanced Cryptology

English or French (3)

- **Elective course unit [6 ECTS]**

Smart Card Security; Audit and Normalization

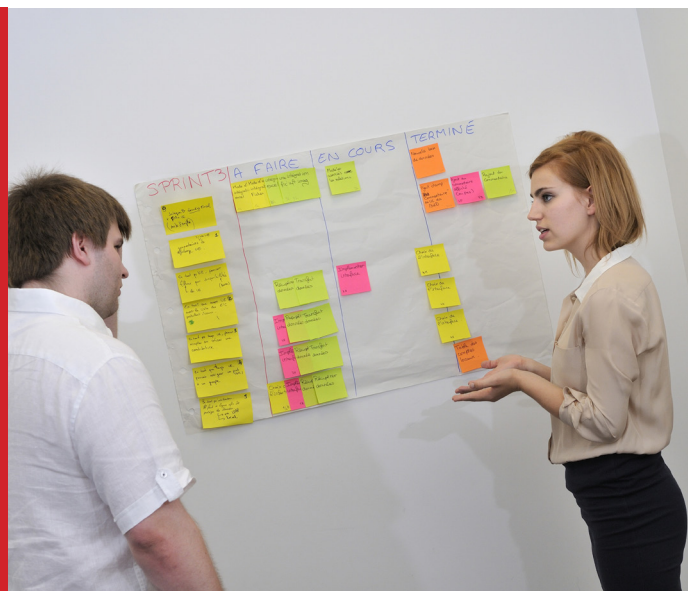
New trends in Cryptology

**Master thesis [27 ECTS]**

Since its creation, we have graduated more than **300** students.

Related research **labs in Grenoble:**

Institut Fourier, LJK, LIG, VERIMAG, Gipsa-Lab, TIMA, and also Inria research centre. Those labs federate their research in cryptology and security within the research team-action SCCyPhy (Security and Cryptology for CyberPhysical systems) of the competitive scientific cluster of excellence Labex PERSYVAL.



# Admissions

Students are selected and admitted to the programme based on their academic records, language skills, motivation and a judgement of their ability to successfully complete the program

Admission webpage:

<http://relint.ensimag.fr/MainEn/Admission>

## ↘ Selection on:

- the basis of prior academic and/or scientific achievement as documented by academic transcripts,
- completed on-line application form
- a motivational essay
- letters of recommendation
- standardized test scores : students from countries where English language is not the primary language are required to provide TOEFL test scores or equivalent.

Tuition and fees: Approximately 500 Euros /Year

Note that tuition fees are highly subsidized by the French Government.

## ↘ Application Deadlines

Admissions Information at <http://mosig.imag.fr>

- Early admissions (recommended to allow time for visas for non-European Students): Mid-February
- Regular admissions deadline: Mid-March
- Late admissions (European students only): Mid-June



### Academic supervisors

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### Registrar's office

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