

Master in Computer science

Cybersecurity 2nd year

Presentation

The global economic impact of losses due to cybercrime amounts to hundreds of billions of euros per year (\$445 billion according to the McAfee/CSIS study of 2014) with a strong increase in attacks, especially for identity theft and digital data theft, as well as malicious attacks. Protection against these vulnerabilities includes :

- Robustness to cyber attacks of sensitive infrastructure (e.g. stuxnet)
- Robustness of security components against software vulnerabilities and data leaks (e.g. heartbleed)
- Protection of privacy and security of cloud infrastructures
- Robust design and evaluation of safety components
- Fault detection in protocols or software and hardware components

The topics covered in the training cover the complementary areas of Cybersecurity, including cryptology, forensics, and privacy, in particular for embedded systems and distributed architectures.

Train cybersecurity experts (including data privacy aspects) with a bac + 5 degree, able to evolve immediately in an industrial environment and who can also pursue a thesis.

The course is labelled "Core AI" by [MIAI](#).

Registration and scholarships

Access conditions

The second year master's is accessible to candidates according to their transcripts (and/or interview):- having validated the first year of a compatible course- or by validating studies or acquired experience according to the conditions determined by the university or the training.

Public continuing education : You are in charge of continuing education :

- if you resume your studies after 2 years of interruption of studies
- or if you followed a formation under the regime formation continues one of the 2 preceding years
- or if you are an employee, job seeker, self-employed

If you do not have the diploma required to integrate the training, you can undertake a validation of personal and professional achievements (VAPP).

[skin.odf-uga:SKIN_ODF_CONTENT_PROGRAM_CANDIDATURE_LABEL](#)

Do you want to apply and register? Note that the procedure differs depending on the degree considered, the degree obtained, or the place of residence for foreign students.

[Find out which procedure applies to me and apply](#)

Prerequisites

Language requirements :

- Students are required to provide evidence of Competence in English.
 English scores required for the MSIAM, programs: TOEFL IBT 78, CBT 210, Paper 547 / TOEIC 700 / Cambridge FCE / IELTS 6.0 min.
 This is equivalent to CEFR level B2.

If you have successfully completed a degree (or equivalent) course at a University in one of the following countries then you meet the English requirement automatically: Australia, Canada, Guyana, Ireland, New Zealand, South Africa, United Kingdom, United States of America, West Indies.

Further studies

Depending on the nature of their practicum, students may wish to pursue research in a doctoral thesis.

Practicals informations :

- > Component : UFR IM2AG (informatique, mathématiques et mathématiques appliquées), Grenoble INP - Ensimag (Informatique, mathématiques appliquées et télécommunications)
- > level : Baccalaureate +5
- > Duration : 1 year
- > Course type : Initial and Continuing Education
- > Location(s) : Grenoble - University campus

Contacts

Program administration

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Program

Program under construction - awaiting CFVU vote

Master 2nd year

Semester 9

UE Software security, secure programming and computer forensics	3 ECTS
UE Security architecture	6 ECTS

UE Cryptographic engineering, protocols and security models, data privacy, coding and applications	6 ECTS
UE Threat and risk analysis, IT security audit and norms	3 ECTS
UE Physical Security : Embedded, Smart Card, Quantum & Biometrics	6 ECTS
1 option(s) to choose from 1	
UE Advanced security	6 ECTS

UE Advanced cryptology 6 ECTS

Semester 10

UE Research practicum (in company or laboratory) 30 ECTS

Master 2nd Graduate School program

Semester 9

UE Software security, secure programming and computer forensics 3 ECTS

UE GS_MSTIC_Research ethics 6 ECTS

UE Cryptographic engineering, protocols and security models, data privacy, coding and applications 6 ECTS

UE Threat and risk analysis, IT security audit and norms 3 ECTS

UE Physical Security : Embedded, Smart Card, Quantum & Biometrics 6 ECTS

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UE Advanced security 6 ECTS

UE Advanced cryptology 6 ECTS

Semester 10

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