

Master in cybersecurity

Focus Cryptanalysis and Forensics

The programme is organised around **five specific and complementary key disciplines**: (1) Cryptography, (2) Systems and Networks, (3) Legal, ethical, and human aspects, (3) Security management, and (5) Secure software engineering

The **first year** of the Master is dedicated to a **common set of courses**. Several seminars and elective courses ensure the **curriculum is dynamic and remains up to date**. For instance, 10 credits can be chosen as **elective courses**, selected from courses already taught in the participating academic institutions.

In the second year, half of the programme's credits are for courses in one of **two focuses**: 'system design and analysis', which is dedicated to the design and thorough analysis of secure systems, and 'corporate strategies', which is dedicated to more concrete applications. Both focuses are built on the **students' personal involvement and self-learning, through several projects**. A significant part of the skills involved is acquired during the **mandatory long-term work placement in a professional environment** (typically 12 weeks).

Students take part in **projects and challenges** that further add to the expertise and practical know-how required in the IT industry. They apply the concepts covered in lectures, and learn new material by solving proposed challenges.

At the end of the programme, students prepare a **Master's dissertation** under the supervision of a professor who is an active researcher in the field.

Bloc 1 | M-SECUC | MA-SECU

Cours obligatoires

ELEC-H504	Network Security Jean-Michel DRICOT (Coordinator) and Charles CUVELLIEZ ⌚ 5 credits [lecture: 24h, practical work: 12h] 📅 second term 🗨 English
INFO-F307	Génie logiciel et gestion de projets Frédéric PLUQUET (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 36h] 📅 second term 🗨 French
INFO-F309	Administration de systèmes Sébastien COLLETTE (Coordinator) ⌚ 5 credits [lecture: 24h, practical work: 24h] 📅 second term 🗨 French
INFO-F405	Introduction to cryptography Olivier MARKOWITCH (Coordinator) and Gilles VAN ASSCHE ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 English
INFO-F514	Protocols, cryptanalysis and mathematical cryptology Olivier MARKOWITCH (Coordinator), Liran LERMAN and Christophe PETIT ⌚ 5 credits [lecture: 24h, tutorial classes: 12h] 📅 second term 🗨 English
INFO-Y111	Computer system security Ramin SADRE ⌚ 5 credits [lecture: 30h, tutorial classes: 15h] 📅 second term
INFO-Y112	Machine learning and data mining Benoit FRENAY ⌚ 5 credits [lecture: 30h, practical work: 15h] 📅 first term
INFO-Y113	Management of security Thibault Debatty (Coordinator) and Wim MEES ⌚ 5 credits [lecture: 24h, practical work: 24h] 📅 second term
INFO-Y114	Legal aspects of IT security Amélie LACHAPELLE ⌚ 5 credits [lecture: 30h] 📅 first term
INFO-Y115	Secure software design and web security Romain ABSIL (Coordinator) ⌚ 5 credits [lecture: 30h, practical work: 20h] 📅 first term

Cours à option - Electives (10 crédits)

TEMP-0000	Cours extérieurs au programme ⌚ 10 credits 📅 academic year 🗨 French
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Master in cybersecurity

Focus Cryptanalysis and Forensics

Bloc 2 | M-SECUC | MA-SECU

Cours obligatoires

- ELEC-H423 [Mobile and wireless networks](#) | Jean-Michel DRICOT (Coordinator)
⌚ 5 credits [lecture: 36h, practical work: 24h] 📅 first term 🗨 English
- INFO-Y116 [Aspects éthiques de l'informatique et de la sécurité informatique](#) | Marie-des-Neiges Ruffo (Coordinator)
⌚ 5 credits [lecture: 30h] 📅 second term
- MEMO-Y117 [Master thesis](#) | Thibault Debatty (Coordinator)
⌚ 20 credits [mfe/tfe: 240h] 📅 academic year

Cours spécifiques

- INFO-Y118 [Mobile and embedded computing](#) | Ramin SADRE
⌚ 5 credits [lecture: 30h, tutorial classes: 30h] 📅 second term
- INFO-Y119 [Forensics and reverse engineering](#) | Thibault Debatty (Coordinator) and Wim MEES
⌚ 5 credits [lecture: 24h, practical work: 24h] 📅 first term
- INFO-Y120 [Data analysis for cybersecurity](#) | Jean-Noël Colin, Bruno Dumas, Benoit FRENAY, Renaud Lambiotte and Florentin ROCHET
⌚ 5 credits [lecture: 30h, practical work: 15h] 📅 first term 🗨 English
- INFO-Y121 [Privacy enhancing technologies](#) | Olivier PEREIRA and François-Xavier STANDAERT
⌚ 5 credits [lecture: 30h, tutorial classes: 30h] 📅 first term
- STAG-F009 [Security analysis internship](#) | Jean-Michel DRICOT (Coordinator) and Olivier MARKOWITCH
⌚ 10 credits [work placement: 120h] 📅 first and second terms 🗨 French

Master in cybersecurity

Focus Corporate Strategies

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INFO-Y114	Legal aspects of IT security Amélie LACHAPELLE ⌚ 5 credits [lecture: 30h] 📅 first term
INFO-Y115	Secure software design and web security Romain ABSIL (Coordinator) ⌚ 5 credits [lecture: 30h, practical work: 20h] 📅 first term

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Master in cybersecurity

Focus Corporate Strategies

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- INFO-Y116 [Aspects éthiques de l'informatique et de la sécurité informatique](#) | Marie-des-Neiges Ruffo (Coordinator)
⌚ 5 credits [lecture: 30h] 📅 second term
- MEMO-Y117 [Master thesis](#) | Thibault Debatty (Coordinator)
⌚ 20 credits [mfe/tfe: 240h] 📅 academic year

Cours spécifiques

- INFO-Y122 [Security Analysis: from audits to red teaming](#) | Jérôme DOSSOGNE (Coordinator)
⌚ 5 credits [lecture: 30h, practical work: 30h] 📅 first term
- INFO-Y123 [Human factors in information security](#) | Jérôme DOSSOGNE (Coordinator)
⌚ 10 credits [lecture: 60h, practical work: 60h] 📅 first term 🗨 English
- INFO-Y124 [Case studies in security strategies](#) | Charles CUVELLIEZ (Coordinator)
⌚ 5 credits [lecture: 30h, practical work: 30h] 📅 second term
- STAG-F010 [Internship in Cybersecurity](#) | Carine PIERRE
⌚ 10 credits [work placement: 120h] 📅 first and second terms 🗨 French