

Master in Information and Computer Sciences

Master académique



📖 FACULTY OF SCIENCE, TECHNOLOGY AND COMMUNICATION

Master in Information and Computer Sciences

Master académique

A warm welcome to MICS

Our Master in Information and Computer Sciences (MICS) focuses on problem-driven understanding of the theoretical foundations of computer science and is a first step towards doctoral studies. Our students will acquire the necessary know-how for higher-level research- and industry-oriented work and will be encouraged to acquire life-long learning skills like abstraction, cross thinking, and independence.

Currently we teach students from more than 10 different countries, and we have national and international cooperation agreements with universities across Europe, US, and China, and industries in banking and other fields. The multilingual and intercultural environment provides students with skills for working both individually and in multinational teams.

MICS is mainly taught by the faculty members of the Computer Science and Communication Research Unit of the University of Luxembourg. International experts have joined the team in the past, as well as colleagues from other research units. Our primary mission is to conduct fundamental and applied research in the area of computer science, communication and information sciences and to push forward the scientific frontiers of these fields.

Who are we?

We are a group of professors, researchers and lecturers coming from Austria, Belgium, France, Germany, Luxembourg, Netherlands, Russia, Spain, and Sweden, working in one of the most charming capitals in Europe.

What about semester fees?

Each student has to pay each semester a registration fee of EUR 100.

What is the content of the MICS?

MICS starts with an orientation meeting where all new students get to know the professors and other students. The first semester is then common for all: it is dedicated to the fundamentals of computer science. By the end of the first semester, the student selects one of the following specialisations:

- Bioinformatics
- Communicative Systems
- Intelligent and Adaptive Systems
- Security and Trust
- Software and systems

The second and third semester offer specialised courses in the selected field, preparing the candidate for the final Master Thesis. Whereas the courses in the second semester are a bridge to more specialised classes, the third semester courses may change depending on the lecturers' and students' interests as well as on current research trends.

Specialisations

Intelligent and Adaptive Systems

Second Semester Courses

- Evolutionary Computing
- Information Theory and Coding
- Knowledge Discovery and Data Mining
- Knowledge Representation

Selected Third Semester Courses

- Applied Mining in Security
- Argumentation
- Content Management Systems
- Natural Language Processing and Text Mining
- Selected Topics In Artificial Intelligence
- Stochastic Methods in Intrusion Detection

Communicative Systems

Second Semester Courses

- Cryptography
- Information Theory and Coding
- Mobile Computing
- Security in Static and Dynamic Network Layers

Selected Third Semester Courses

- Coding Theory
- Non-/Cooperative Information Routing
- Parallel and Grid Computing
- Technical Systems Modeling and Simulation
- Ubiquitous Computing

Security and Trust

Second Semester Courses

- Application of Trust Systems
- Cryptography
- Information Theory and Coding
- Security in Static and Dynamic Network Layers

Selected Third Semester Courses

- Advanced Open Network Security
- Applied Mining in Security
- Cryptography in the real world
- Management of Information Systems Security
- Verification of Security Protocols

Bioinformatics

Second Semester Courses

- Evolutionary Computing
- Knowledge Discovery and Data Mining
- 2 other courses from the Master of Science in Integrative Systems Biology programme (MISB)

Selected Third Semester Courses

- Bio-informatics and Bio-modelling
- Bio-informatics Programming + 2 other courses from the Master of Science in Integrated Systems Biology programme (MISB)

Target group

We are looking for students with a Bachelor or equivalent Diploma degree in computer science or relevant field, with good mathematical knowledge, and with the motivation to study in a research-oriented field. MICS is completely taught in English.

Career opportunities?

Luxembourg is a major financial center with ever increasing needs of highly qualified IT staff. Other employment opportunities are found in the public sector, local industries and public research institutes. Furthermore the MICS prepares students for a PhD in computer science.

Why study in Luxembourg?

Luxembourg is a multilingual country, a home for people of many cultures. Founded in 2003, the University of Luxembourg offers an inspiring and international learning environment with innovative courses and a high degree of interaction between students and professors in a personal environment. Active participation during lectures is highly appreciated as well as a problem-oriented view of computer science in general. In MICS, we offer a tutoring system to encourage students to discuss their interests and needs with a person of trust, who will also assist in the choice of the specialisation. However, MICS does not only stand for a knowledge transfer but encompasses also a wide range of social activities such as chess playing, movies, and more.

You want to register?

Simply fill out the registration form at http://www.en.uni.lu/les_etudiants/les_inscriptions/ or contact

SEVE- Student Service Campus Limpertsberg

162a, avenue de la Faïencerie
L-15511 Luxembourg
seve.infos@uni.lu
T. + 352 / 46 66 44-6610 /-6622

Contact?

Academic director

Ass.-Prof. Christoph Schommer
christoph.schommer@uni.lu
T. +352 / 46 66 44-5228

Software and Systems

Second Semester Courses

- Dependable Real-time Systems
- Formal Methods
- Mobile Computing
- Optimization Techniques for Computer Science

Selected Third Semester Courses

- Embedded Systems
- Model-Driven Software Development
- Proactive Systems
- Product Lines Engineering
- Research Frontiers
- Service-Oriented Software Architecture