MASTER OF SCIENCE IN INFORMATICS AT GRENOBLE (MOSIG)

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PRINT PAGE

Presentation and goals

The training covers a wide spectrum at the level of the first year master's trains graduates with a general education and foundation solid in computer science (in terms of programming languages, databases, networks, software engineering, object-oriented design/programming, complexity, and interactive software) ; the second year of the master's allows students to acquire organizational skills related to research work and to become specialized in a field of computer science in connection with the numerous options offered (Information systems and advanced software engineering, Human-centred computer science - design of highly reliable embedded and cyberphysical systems, artificial Intelligence and web - graphics, vision, and robotics, interactive and ubiquitous systems, and embedded, parallel, and distributed systems). The objective is to give the necessary foundations for a job in research and development as well as to undertake a thesis in Computer science in the fields covered by academic and industrial laboratories.
The aim of the course is to carry out high-level training in computer science for teaching, research, engineering, and development.
The initial semester (Master1 - S7) is composed of foundational courseware
The second semester (Master1 - S8) combines core foundational courseware with optional specialization courses.
For the semester S9 of 30 ECTS, students need to select courses worth 24 ECTS in their chosen theme (according to their initial training) and 6 ECTS of courses from a different theme, if timetables are consistent and enrollment restrictions apply.
The final semester (Master2 - S10) is dedicated to an end of studies research (or professionnal) project.

COURSES OFFERED BY

CONTACTS

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The course is labelled "Core AI" by MIAI.
Mosig master website

› Presentation

Presentation

Further information

The research community on which this training is based is internationally recognized and has significant visibility.

International dimension :

Internationally-oriented programmes
Possibility of doing a double degree with the University of Swansea.

Partnerships:

Accredited organizational unit(s)

- Polytechnic Institute of Grenoble

Other partner structure(s)

Multidisciplinary Institute in Artificial intelligence

› Programme

Program under construction - awaiting vote CFVU

Program administration

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IN BRIEF

Discipline :
Computer Science, Mathematics, Information and Communication Sciences and Technologies
Programme type(s) :
Initial and Continuing Education
Language(s)

Master 1st year

- Semester 7
  - UE Programming language and compiler design 6 ECTS credits
  - UE Software engineering 3 ECTS credits
  - UE Principles of operating systems 6 ECTS credits
  - UE Algorithms Problem Solving 3 ECTS credits
  - UE Mathematics for computer science 3 ECTS credits
  - UE Introduction to visual computing 3 ECTS credits
  - UE Technical writing and speaking 3 ECTS credits

  1 option(s) to choose from 2
  - UE Programming project (OS) 3 ECTS credits
  - UE Programming project (Compiler design) 3 ECTS credits
- Semester 8
  - UE Research project (TER) 3 ECTS credits
  - UE Research methodology 3 ECTS credits

  8 option(s) to choose from 14
  - UE Introduction to modeling and verification of digital systems 3 ECTS credits
  - UE Operations Research 3 ECTS credits
  - UE Data base foundations 3 ECTS credits
  - UE Introduction to distributed systems 3 ECTS credits
  - UE Human computer interaction 3 ECTS credits
  - UE Intelligent systems: reasoning and recognition 3 ECTS credits
  - UE Computer networks principles 3 ECTS credits
  - UE 3D graphics 3 ECTS credits
  - UE Introduction to mobile robotics 3 ECTS credits
  - UE Introduction to cryptology 3 ECTS credits
  - UE Parallel algorithms and programming 3 ECTS credits
  - UE Fundamental Computer Science 3 ECTS credits
  - UE Foundations of Data Science 3 ECTS credits
  - UE Embodying the shift: digital in the age of low-tech 3 ECTS credits

: English, French
Location(s) : Grenoble - University campus
International dimension : Yes
Duration of studies : 2 years
Required entry level : Baccalaureate +3

Master 1st year Graduate School program

- Semester 7
  - UE Programming language and compiler design 6 ECTS credits
  - UE Software engineering 3 ECTS credits
  - UE Principles of operating systems 6 ECTS credits
  - UE Algorithms Problem Solving 3 ECTS credits
  - UE Mathematics for computer science 3 ECTS credits
  - UE Introduction to visual computing 3 ECTS credits
  - UE Technical writing and speaking 3 ECTS credits

  1 option(s) to choose from 2
  - UE Programming project (OS) 3 ECTS credits
  - UE Programming project (Compiler design) 3 ECTS credits
- Semester 8
  - UE GS_MSTIC_Scientific approach 6 ECTS credits

  8 option(s) to choose from 14
  - UE Introduction to modeling and verification of digital systems 3 ECTS credits
  - UE Operations Research 3 ECTS credits
  - UE Data base foundations 3 ECTS credits
  - UE Introduction to distributed systems 3 ECTS credits
  - UE Human computer interaction 3 ECTS credits
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  - UE Foundations of Data Science 3 ECTS credits
  - UE Embodying the shift: digital in the age of low-tech 3 ECTS credits

Master 2nd classic program

- Semester 9

- UE Process engineering 6 ECTS credits
- UE Advanced networking 6 ECTS credits
- UE Advanced parallel system 6 ECTS credits
- UE Fundamentals of data processing 6 ECTS credits
- UE Knowledge representation and reasoning 6 ECTS credits
- UE Scientific Methodology, Regulatory and ethical data usage
  6 ECTS credits
- UE Robotics 6 ECTS credits
- UE Computer Graphics 6 ECTS credits
- UE Multi-agent systems 3 ECTS credits
- UE Information visualization 3 ECTS credits
- UE Mathematical Foundations of Machine Learning 3 ECTS credits
- UE Advanced Machine Learning: Applications to Vision, Audio and Text
  6 ECTS credits
- UE Natural Language Processing & Information Retrieval
  6 ECTS credits
- UE Computer vision 6 ECTS credits
- UE Augmented and virtual 6 ECTS credits
- UE Advanced software **model**ing and engineering 6 ECTS credits
- UE Information Security 6 ECTS credits
- UE Human in the Loop 6 ECTS credits
- UE Cloud Computing, from infrastructure to applications
  6 ECTS credits
- UE System design 6 ECTS credits
- UE Large scale Data Management and Distributed Systems
  6 ECTS credits
- UE GPU Computing 6 ECTS credits
- UE From Basic Machine Learning **model**s to Advanced Kernel Learning
  6 ECTS credits

UE Testing and verification, from algorithms to practice
6 ECTS credits

- UE Statistical learning: from parametric to nonparametric **model**s
  6 ECTS credits

- Semester 10
  - UE Research project 30 ECTS credits

Master 2nd Graduate School program

- Semester 9

- **UE GS_MSTIC_Research ethics** 6 ECTS credits

- **UE Process engineering** 6 ECTS credits
- **UE Advanced networking** 6 ECTS credits
- **UE Advanced parallel system** 6 ECTS credits
- **UE Fundamentals of data processing** 6 ECTS credits
- **UE Knowledge representation and reasoning** 6 ECTS credits
- **UE Scientific Methodology, Regulatory and ethical data usage**
  6 ECTS credits
- **UE Robotics** 6 ECTS credits
- **UE Computer Graphics** 6 ECTS credits
- **UE Multi-agent systems** 3 ECTS credits
- **UE Information visualization** 3 ECTS credits
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  6 ECTS credits
- **Semester 10**
  - UE Research project 30 ECTS credits

Practica, projects, and missions

Internship: Mandatory
Duration: 4 to 6 months
Internship abroad: In France or abroad
A mandatory practicum or research project of 4 to 6 months is carried out in the second semester. It can be done in a research laboratory but also in the R&D department of a company. In this case, a teacher-researcher of the training tutors the practicum and ensures the training in the research provided. This research project allows for good immersion in the world of research, the discovery of the research profession and the preliminary contacts for the eventual pursuit of a thesis.

› Registration and scholarships

Registration and scholarships

Access condition

The first year of master's degree is accessible on file (and / or interview) to candidates with a national diploma conferring the degree of license in a field compatible with that of the master or via a validation of studies or acquired according to the conditions determined by the university or training. 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)

Candidature / Application

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

› And after

And after

Further studies

Ph.D.

Sectors of activity

Research and higher education, research and development

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