CENTRALE LYON

Master 2 Electronics, Electrical Energy, Automation

Degree level: Master
Training time: 1 year
Language: French
Status: Student
Campus: Lyon-Ecully Campus

Objectives



Centrale Lyon offers a **master 2**

Électronique, Énergie Électrique, Automatique declined in the **three** following courses:

- Automatics for Intelligent Systems
- Electrical Energy
- Electronics and Embedded Systems

During a one-year training program, students acquire the **knowledge essential to the modeling, analysis and control of electrical and industrial systems** :

- Designing, sizing, optimizing and/or using electrical/electromagnetic components/systems
- Modeling and analyzing a system
- Mastering tools and methods, both formal and numerical, for system design

- Associate these components and/or systems, understand and control the various phenomena and their impact on system performance
- Master their operation and control
- Master energy efficiency

Program

Intelligent systems automation Electrical energy

Electronics and embedded systems

The course is organized around theoretical and practical knowledge in automation of continuous systems as well as logic systems.

Teachings

- Automatics of linear dynamical systems
- Optimal control
- Distributed parameter systems
- Operational research
- Observation of nonlinear dynamical systems
- Robustness and convex optimization
- Nonlinear system: analysis and control
- System identification and parsimonious signal decomposition
- Diagnostics and Dependability
- Advanced Automatics

Internship

Students must complete a 5-6 month internship in a laboratory or company.

The course covers the disciplines of electrical engineering, electrical energy management, power electronics and automation. It is based on mastery of electrical, electronic and electromagnetic phenomena and their interactions with the environment at very different dimensional, temporal and/or energy scales.

Teachings

- Electromagnetic compatibility
- Control of electrical drives
- Converters for networks
- Diagnosis and prognosis of electrical devices
- Power electronics
- Reliability and dependability
- Electrical engineering materials and applications
- Production and transport
- Design and sizing of electrical actuators
- Labor law and business creation
- Project management and management
- Electromagnetic modeling in GE

Internship

Students must complete a 5-6 month internship in a laboratory or within a company.

This path specializes in embedded electronics for embedded systems: low-power issues, technological heterogeneity... with skills in device physics.

Teachings

- Architectures and constraints for embedded processing
- Heterogeneous design
- Corporate research lectures
- Advanced and emerging electronic advanced and emerging
- Tools and methods for embedded system design
- Secure embedded systems
- Autonomous microsystems
- Green Computing
- Microsystems, microsensors, microfluidics
- Memories for the Internet of Things

Internship

Students must complete a 5-6 month internship in a laboratory or within a company.

Diploma and certification

This course awards a national master's degree - controlled by the State.



Career opportunities

- R&D or design engineer in automation / electronics / electrical engineering
- Product and technical sales engineer
- Business manager
- Business manager in automation, electronics or electrical engineering field
- Teacher - Researcher

Focus

A master's degree co-accredited with Université Lyon 1

As part of this partnership, some courses will take place on the La Doua Villeurbanne - La Doua campus

- 43, boulevard du 11 novembre 1918, 69100 Villeurbanne

Admission requirements and application

Pre-requisites

- Students holding an M1 in the fields of EEA (electronics, electrical energy, automation), physics, applied mathematics or applied computer science.
- Centrale Lyon engineering students as part of a double degree.

Application

Applications are considered on the basis of a portfolio.

Find out how to apply

Tuition fees

Applications are considered on the basis of an application file.

Find out more about Master's course fees Discover the average budget for studies at Centrale Lyon

Administrative contact

Education department - French-speaking Masters

Information and registration

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Educational contacts

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Useful links

- Discover the syllabus
- Lyon 1 University