

# Master of Science and Engineering

## Embedded Electronics Systems

Embedded Systems (ES) manage precise tasks in complete autonomy and in real time, providing solutions in a variety of industries: energy, health, transportation, and beyond. ES covers a wide range of skills in the fields of energy consumption, integration, data processing, and communications. The aim of Junia ISEN's Embedded Electronics Systems program is to **train engineers who master the material aspects (electronics) and software implications** (embedded systems or mobile applications) of high-tech systems that improve our everyday lives.

### active pedagogy

Our Embedded Electronics Systems program is built on project-based learning, active teaching methods, and learning-by-doing. This hands-on approach gives students real world experience and, with our piecemeal curriculum, the power to decide how to build their own expertise.

### LEARNING BY DOING

- Teaching and group projects supervised by professionals
- Hackathons and coding challenges
- Innovation learning centers and Fab Lab
- Flipped classrooms and serious games
- Co-design labs with partner schools

### projects

Semester-long team projects are an integral part of the curriculum. One day per week is dedicated to group projects in collaboration with a professional expert, partner company, or research institute and supervised by a Junia ISEN faculty member.

### EXAMPLES OF PROJECTS

- Real-time audio filtration in a digital circuit programmed to recognize key words with minimal consumption
- Connected wristband for athletic data
- Installation of a sensor network based on LoRa technology

### internships

Students spend 40% of the program immersed in real professional experience. These internships, carried out either in France or abroad, in a company or research center, expose students to the current reality of working and prepare them for entry into the global workforce.

### EXAMPLES OF INTERNSHIPS

- Research and development in automation and robotics
- Development of an Energy Management System
- Electronic engineering internship

## career prospects

Embedded systems are essential in controlling a vast array of devices ranging in size and complexity from consumer products and home appliances to aircraft and electrical grids. This widespread application creates an opportunity for IT engineers across industries. Some career prospects in embedded systems include embedded systems designer, communication electronics technician, systems integrator, tester, systems project leader, embedded applications architect, and more.

In addition to exceptional technical knowledge and managerial skills, Junia ISEN graduates are prepared for the reality of the professional world even before they get their diploma, which is why 100% of Junia ISEN alumni are employed within 6 months of graduating. Junia's more than 11,000 alumni around the world work for some of the biggest names in electronics and digital technology or join and create their own startups thanks to the entrepreneurial mindset cultivated at Junia.

## practical information

### admission requirements

- Bachelor's degree in Digital and Information Technology, IT Engineering or any related fields
- English B2 level certified by an official test (IELTS 6.0, TOEIC 785, TOEFL IBT 80)
- Knowledge of French language is recommended, but not required for admission

### application procedure

To apply, visit [junia.force.com](http://junia.force.com) and:

- Fill out the online application form
- Upload supporting documents
- Attend individual interview (in-person or video conference)
- Application and all required materials must be submitted before **May 15, 2022**

Need help : [admission.international@junia.com](mailto:admission.international@junia.com)

### financial aspects

#### Fees and other expenses

- 2022-2023 Tuition Fees:
  - Non-EU students: €10,600 (Year 1)
  - EU students: €9,000 (Year 1)
- Living expenses in France: approx. €650/month
- Miscellaneous fees (insurance, visa...): approx. €500/year

#### Scholarships and Financial Aid

- Scholarships Available: contact your local French embassy or Campus France office
- Paid internships if carried out in France: min. €555/month
- French government housing allowance: approx. 90€/month

## MASTER 1

|                   |  | ECTS |
|-------------------|--|------|
| Fall Semester     | Advanced Signal Processing                 | 3    |
|                   | Java 1                                     | 3    |
|                   | Analog Circuit Design                      | 3    |
|                   | Labview: Basis                             | 3    |
|                   | Digital Programmable Circuits: FPGA & VHDL | 3    |
|                   | Wireless Technologies & Applications       | 3    |
|                   | Hands-on 32-bit ARM micro-controllers      | 2    |
|                   | French as a Foreign Language               | 3    |
| Technical Project | 4  |      |
| Spring Semester   | Power Electronics                          | 3    |
|                   | Microwave Circuits                         | 3    |
|                   | Digital Microelectronic Circuits           | 3    |
|                   | Audio Signal Processing                    | 2    |
|                   | Humanities and Management                  | 5    |
| Technical Project | 7  |      |
| Summer Internship | Three-month Internship                     | 10   |

## MASTER 2

|               |   | ECTS                 |
|---------------|---|----------------------|
| Fall Semester | Advanced Electronics                                    | 3                    |
|               | Mixed-Signal Integrated Circuits for Audio Applications | 3                    |
|               | High-Frequency Electronics                              | 3                    |
|               | Real-Time Computing for Embedded Systems                | 3                    |
|               | Automotive Electronics OR LabVIEW Basis                 | 2                    |
|               | Humanities & Management                                 | 5                    |
|               | French as a Foreign Language                            | 2                    |
|               | Innovation Project                                      | 9                    |
|               | Spring Semester   | Six-month Internship |

Course details are subject to change, please visit <https://www.junia.com/en/our-degree-programmes/> for the latest information

## international student services

### Dedicated support just for you

- Reservation of accommodation in a student residence
- Administrative procedures (visa, resident permit, etc.)
- Integration into student life (associations, activities, etc.)
- Welcome Session: intensive French language course, intercultural communication, orientation week, social events, and more

**JUNIA** Graduate school of science and engineering  
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**Cti**  
Commission des titres d'ingénieur

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