

Field of study **Sciences and engineering**

Training available in

Apprenticeship

Initial training

Continuing education

Recognition of prior learning

#### How to apply :

<https://www.univ-gustave-eiffel.fr/en/formation/applications-and-enrolment/applications>

#### Course venue :

Campus Marne la Vallée - Champs sur Marne - Bâtiment Copernic 5 Boulevard Descartes 77420 Champs-sur-Marne

#### Calendar :

From mid-September to end of March, there are theoretical and practical classes, followed by a mandatory internship of four to six months beginning in April.

#### Contacts :

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RICHALOT-TAISNE Elodie (M2)  
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SPAENS Julia (M1-M2)

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#### More information :

For further details :

<https://www.univ-gustave-eiffel.fr/international/etudiants-internationaux>

Service Information,

Orientation et Insertion Professionnelle (SIO-IP) :

[sio@univ-eiffel.fr](mailto:sio@univ-eiffel.fr) / Tel : +33 1 60 95 76 76



## Master's degree Electronics, electrical energy and automation Microsystems and communicating sensors



Institut d'électronique et d'informatique Gaspard Monge (IGM)

Master's degree M2

#### TO GET THERE

For M1, a high school diploma plus three years of higher education in science. For M2, a high school diploma plus four years of higher education in science. Recruitment on the basis of application.

#### ACQUIRED SKILLS

Theoretical knowledge: physics of materials for micro-technology, physics of electrical and optical components, communication systems, microwave devices.

Methodological knowledge: design of analogue integrated circuits, design of digital circuits, electromagnetic compatibility of circuits and systems.

Practical knowledge: clean-room technologies, microwave characterisation, modelling (mechanical, microwave frequency or components), circuit design software, circuit programming (VHDL), Java.

#### YOUR FUTURE CAREER

Graduates can become design engineers, research engineers, project managers in companies, researchers or faculty members.

They can work in the following sectors of activity:

- Sectors requiring advanced miniature sensors and circuits (transport, medical instrumentation, etc.)
- Industrial sectors requiring the use of sensors or measuring systems (quality control, tests, home automation, energy).
- Telecommunications: development of communication devices, monitoring of connection quality.

It is also possible to move into research. Graduates can work in public or private research and development, as well as in teaching and research in universities and schools.

#### BENEFITS OF THE PROGRAM

The course is supported by the ESYCOM Laboratory's excellent skills in the subjects taught and state-of-the-art lessons are given on its research topics. Speakers from the industry present seminars on rapidly changing fields. Part of the curriculum is taught in English, thereby preparing students for entry into the industrial or research sector.

More information



# PROGRAM

## SEMESTER 3

### Analyse de Cycle de Vie

Conception de systèmes RF (ECTS:3)

Initiation aux MEMS et à la micro-électronique (ECTS:2)

Micro-capteurs MEMS (ECTS:3)

Composants électroniques et optiques avancés (ECTS:3)

- Composants électroniques avancés

- Composants optiques

Conception de circuits intégrés analogiques (ECTS:3)

Circuits intégrés numériques (ECTS:2)

- Conception de circuits intégrés numériques

- Acquisition de données

Technologies des circuits programmables et mémoires (ECTS:1)

Informatique pour l'Intelligence Artificielle (ECTS:3)

Anglais (ECTS:3)

PCB et intégrité de signal (ECTS:3)

Antennes : fonctionnement et propriétés (ECTS:1)

Méthodes de modélisation en électromagnétisme (ECTS:1)

Séminaires industriels

Liaison optique pour le très haut débit / Choix 1 (ECTS:2)

Transmissions HF / Choix 2 (ECTS:2)

Gestion d'entreprise / Choix 3 (ECTS:2)

## SEMESTER 4

Stage (ECTS:30)