

Field of study **Sciences and engineering**  
**Management, Economy,**  
**Communication**

Training available in

Initial training

**How to apply :**

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

**Course venue :**

Campus Marne la Vallée - Champs sur Marne - Ecole Nationale des Sciences Géographiques (ENSG) 6/8 avenue Blaise Pascal 77420 Champs sur Marne

**Calendar :**

Three-month internship from end of May to mid-September.

**Contacts :**

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Academic coordinator

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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 Geomatics Geomatics



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

Master's degree M1

### TO GET THERE

- Students from scientific degrees (mathematics, computer science, earth sciences, etc.) motivated by the applied aspects of these disciplines and interested in topics using spatial data;
- Students from geography degrees and courses relating to spatial planning (urban design, architecture, etc.) with skills in computer science, data analysis;
- Students from professional degrees in geomatics with excellent grades, particularly in theoretical subjects, who have career objectives that require them to pursue further studies.

### ACQUIRED SKILLS

- Explain and use technologies dedicated to acquisition, processing and representation of geographical information (GIS, cartography, remote sensing, statistics, spatial analysis, etc.)
- Design an algorithm
- Write an algorithm in Python and know how to programme in other computer languages
- Model and query a geographic data base
- Explain and account for the characteristics of different sources of information used in photogrammetry and remote sensing (geometric modelling and georeferencing)
- Produce a literature review on a well-defined subject
- Explain and use computer science project management methodologies
- Use English

### YOUR FUTURE CAREER

M1 provides the foundation needed to study one of the two Master's in Geomatics:

- M2 in Information System Technologies, with a significant technical component for managing geographic information systems.
- M2 in Geographical Information: Spatial Analysis and Remote Sensing, focused on analysis of geographic, image and vector data: extraction of information from satellite images, spatial analysis applied to data relating to mobility, networks, spatial occupation, etc. for all types of application, especially in environmental sciences.

### BENEFITS OF THE PROGRAM

The course is coordinated by the National School of Geographical Sciences (ENSG) and the Gaspard Monge Institute of Electronics and Computer Science (IGM), components of Université Gustave Eiffel. The geomatics classes are given by faculty members from M2 in Information System Technologies, M2 in Geographical Information: Spatial Analysis and Remote Sensing and ENSG, as well as researchers/engineers from IGM and the professional world. The course is therefore highly relevant from a professional point of view and aligned with the fields of research and industry.

More information



# PROGRAM

## SEMESTER 1

### **TECHNIQUE DE BASE EN INFORMATIQUE (ECTS:10)**

- Algorithmie et programmation avec Python
- Bases de données relationnelles
- Analyse Informatique
- Programmation orientée objet

### **METHODES D'ACQUISITION DE DONNEES GEOGRAPHIQUES (ECTS:8)**

- Géolocalisation
- Traitement des données d'observation de la Terre

### **METHODES D'ANALYSE SPATIALE (ECTS:11)**

- Mathématiques pour la Géomatique
- Introduction aux SIG
- Statistiques et analyse de données
- Analyse spatiale

## SEMESTER 2

### **EXPRESSION, COMPREHENSION SCIENTIFIQUE ET TECHNIQUE (ECTS:4)**

- Anglais Technique et informatique
- Etude Bibliographique scientifique
- Enjeux environnementaux du numérique

### **DIFFUSION DES DONNEES GEOGRAPHIQUES (ECTS:11)**

- Cartographie
- Web cartographique
- Programmation sous SIG
- Base de données géographiques

### **PROJET DE DEVELOPPEMENT INFORMATIQUE (ECTS:6)**

- Méthodes agiles, techniques de développement
- Projet Informatique appliqué aux données géographiques

### **STAGE DE FIN D'ANNEE (ECTS:10)**