



Institut Gaspard Monge (IGM)

# MASTER (EN) GEOMATICS

## Technologies des systèmes d'information



MASTER (EN) M2

### ENTRY REQUIREMENTS

Through the first year of this master :

- Students with professional degrees in geomatics;
- Geography degree students, as well as land-use related training (urban planning, architecture, etc.) with skills in computer science, data analysis or GIS;
- For the second year : students in scientific fields (mathematics, computer science, physics, etc.) motivated by the application aspects of these disciplines.

### ACQUIRED SKILLS

This master's degree trains geomaticians capable of :

- Designing an algorithm, a workflow ;
- Modelling a phenomenon, a process;
- Knowing the technologies for describing and acquiring geographic datasets ;
- Programming in python, in java, in different languages of the web;
- Knowing the geo-visualization technologies;
- Steering, managing an IT/IS project;
- Designing a geographic information system architecture.

### YOUR FUTURE CAREER

Future graduates can be employed in the numerous sectors of activity using digital information and including geographic information: network management (energy, telecommunications, transport...), digital services, decision support, support for territorial policies...

### BENEFITS OF THE PROGRAM

Geomatics courses are conducted by a majority of professionals from ENSG, IGN and the professional world, so the training is very up to date from an industrial point of view. Long projects are driven by external sponsors.

FIELD Sciences, technologies, santé

Course suitable for

Initial Education

Continuing Education

Recognition of prior learning

#### • How to apply :

Candidature sur l'application eCandidat et/ou Etudes en France.

#### • Course venue :

Ecole Nationale des Sciences Géographiques (ENSG)  
6/8 avenue Blaise Pascal  
Cité Descartes, Champs-sur-Marne  
77455 MARNE LA VALLÉE CEDEX 2

#### • Calendar :

Stage de 4 à 6 mois entre fin avril et le 30 septembre avec prolongation possible au 31 octobre.

#### • Contacts :

- Coordinator of the degree program : BIRI Venceslas (M1-M2)  
- Academic coordinator : RICHARD Didier (M2)  
- Academic secretary : CONSTANT Mina (M1-M2)  
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For further details :

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# STUDY PROGRAM

## SEMESTRE 1

PROJECT MANAGEMENT, DEVELOPMENT TECHNOLOGIES, AGILE METHODS  
gestion de projet informatique - technique de développement de projet, management de projet - méthodes agiles -  
GEOOMATIC PROJECT  
IS ARCHITECTURE AND SECURITY cloud computing - Modélisation de l'Information géographique 3D - architecture des systèmes d'information - sécurité des systèmes d'information -  
DEVELOPMENT FRAMEWORKS Programmation orientée objet - JEE - Frameworks (Hibernate, Spring) -  
BASIC TOOLS Linux - SGDB non SQL - Web Sémantique -  
COMMON PROJECT

## SEMESTRE 2

INTERNSHIP  
Choix option : Développement avancé ou architecture avancée  
COMPÉTENCES EN DÉVELOPPEMENT AVANCÉ  
WEB APPLICATION ARCHITECTURE Front et Back avancés - Réalité Virtuelle, augmentée -  
OUTILS AVANCES POUR LES SI Architecture avancée des SI - Big Data - Compilation -  
EMBEDDED SYSTEMS AND HPC systèmes embarqués - Parallélisme, architecture CPU/GPU -  
COMPÉTENCES EN ARCHITECTURE AVANCÉE  
SDI A FIRST APPROACH normalisation - marchés publics - gestion de projet sig - systèmes d'information géographique -  
SDI IN PRATIC infrastructure de données géographiques - modélisation d'idg -