

ENSG-GÉOMATIQUE PARIS

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Une école de



CAPACITY DEVELOPMENT CHALLENGES IN THE GEOSPATIAL DOMAIN AT THE ENSG

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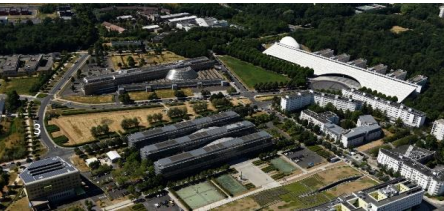
ENSG-Géomatique

IGN
INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE

CHANGER
D'ÉCHELLE

 **Université
Gustave Eiffel**

 **FONDATION
ENSG - Géomatique**
Sous l'égide de la Fondation de France



- An IGN school
- Attached to the ministries responsible for ecology, energy, forestry and the territories...
- A school of Gustave Eiffel University
- A foundation enabling the payment of financial aid to students, among other things
- Located at the heart of the Descartes Campus, 30 minutes from Paris
- 3 research units

Observer la Terre
et faire parler les données

Observing the Earth and making the data talk

ENSG
Géomatique

École d'ingénieur·e·s
Paris | Marne-la-Vallée

Engineering program

- The engineering program at ENSG prepares all students to play a future role in sustainable development and spatial planning in all its dimensions.
- Objectives: education, research, international and corporate experience.
- 3 years of study after “Classes préparatoires aux grandes écoles (CPGE) = classes prépas “ intensive preparatory course with the main goal of training students for enrolment in one of the [*grandes écoles*](#)

1st year

- Mathematics and physics
- General IT
- Fundamental geomatics
- Humanities and social sciences

2nd year

- Applied IT
- Advanced geomatics
- Humanities and social sciences

3rd year

- Specialisation

3rd year

The third year is a year in which students specialise within the framework of their professional project. It can be taken at ENSG or at a partner school.

1. [Photogrammetry, Positioning and Deformation Measurement \(PPMD\)](#) : *Geodata acquisition, 3D modelling, geolocation, geoinaging*
2. [Information Systems Technologies \(TSI\)](#) : *IT development, information systems architecture, geographic data infrastructure, (the course in this stream are shared with that in the M2 IST).*
3. [Geographic information: spatial analysis and remote sensing \(IGAST\)](#): *GIS, Spatial analysis, Spatial imaging, Remote sensing, Environmental applications (This course is shared with that of M2 IGAST)*
4. [Cartography, geovisualisation and spatial analysis \(Carthagéo\)](#) : *Geovisualisation and dissemination of geographic information, GIS (This course is shared with the M2 Carthagéo)*
5. [Sustainable Development, Environmental Management and Geomatics \(DDMEG\)](#) : *Ecological transition, adapting to climate change, environmental law and economics (the courses in this stream are shared with those in the M2 DDMEG)*
6. [Geo data management for Energy Mix \(GDM\) taught in English](#) : *Data management, data science, georesources, renewable energies (This course is shared with that of the MS GDM)*
7. [Geo data science \(GDS\) sandwich course/vocational coop program](#) : *Information systems, business intelligence, statistical analysis, AI, big data*

This final year culminates in a five- to six-month end-of-studies project (in a company, local authority or research laboratory)

International development of ENSG

- Developing the school's international visibility;
- Organising student and teacher exchanges with partner universities;
- Managing international partnership agreements;
- Managing scholarships for the school's international students;
- Organising language courses for students;
- Welcoming international students to the school.



Very much interested to discuss with you about potential partnership for student / teacher exchanges

new challenges

Training tomorrow's geomatics experts to contribute to the ecological transition

Geospatial information is needed to design and manage **proper public policies and public services** in all domains (energy, mobility, circular economy, biodiversity, air, water & soil management, sustainable agriculture...)

→ Needs for :

1. reliable & continuous land monitoring
2. simulation capacities
3. convincing and reliable representations
4. ...

Uncertain context

- Train responsible engineers to meet today's environmental and climate challenges
- Continue to teach the fundamentals of geomatics
- Better integrate AI into the curriculum to enable students to :
 - stay at the cutting edge of technology
 - use AI tools
 - adapt AI tools to specific needs
 - objectively assess their results
 - analyse the impact of their use

New training targets : initial insights before launching a major overhaul of the syllabus

- Train responsible engineers to meet today's environmental and climate challenges
- Continue to teach the fundamentals of geomatics
- Better integrate AI into the curriculum to enable students
- need for innovative teaching methods
- **involve students in the process**
- give students the means to ask themselves the right questions
- strengthen the role of living things in training
- encourage ethical reflection
- move towards a common base of knowledge and skills to contribute to the ecological transition
- theory
- case studies focusing on the ecological transition
- systematic review of the energy cost
- need for interdisciplinarity is greater than ever
- IT development
- real-life projects to get to grips with reality, failures and iterations
- training in and through research: ability to follow the state of the art through scientific literature
- Developing AI systems requires skills in data, learning procedures, model architectures, thematic field...

Our agenda

Beginning of 2025 : launching a major overhaul of the syllabus

Iterative process involving

- Alumni
- Current students
- ENSG teachers and researchers
- Employers
- Scientific experts

Taking into account benchmarks on existing courses

To be taken into account from September 2026 on

Very much interested to discuss the methodology with you ;-)