

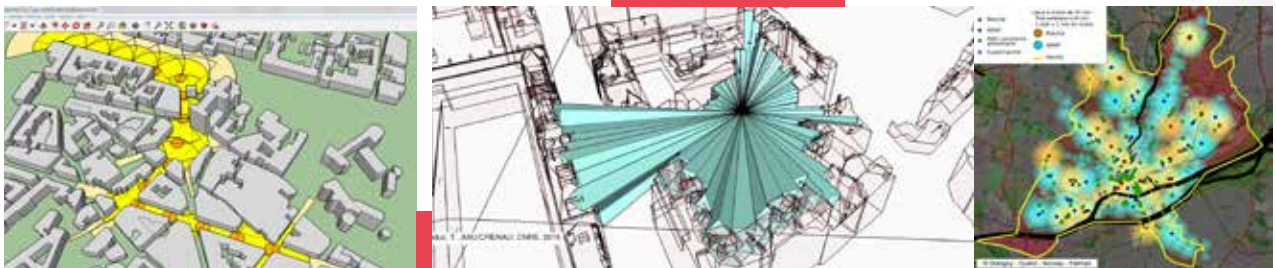


2ND AND 3RD YEAR SPECIALISATION

DIGITAL CITY GEOMATICS AND URBANISM

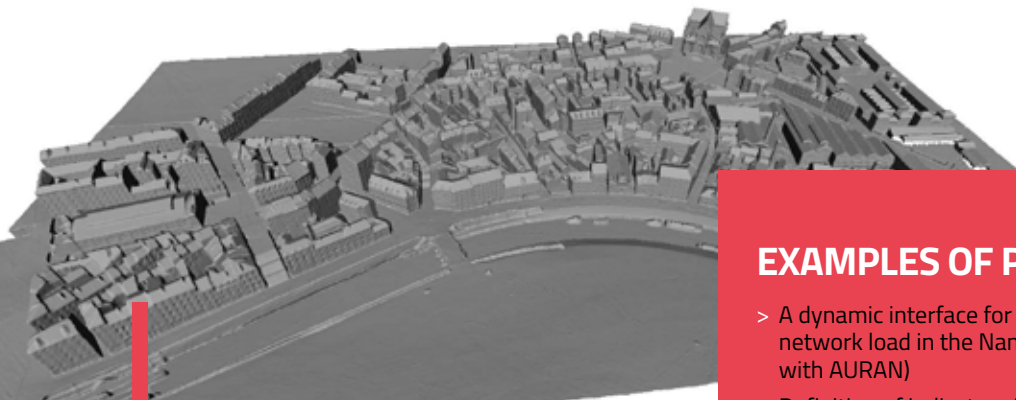
Implementing the digital transition of the sustainable city:

- > Build the digital twin of the city
- > Understand its impact on decision-making (mobility, health, land, resilience, etc.)
- > Address the complexity of urban systems, their stakeholders and processes for sustainable city management



COURSE CONTENT

- > Introduction to Programming
- > Geographical Information Systems (partly in English)
- > Urban issues
- > Geographic information systems and databases
- > Professional applications
- > GIS Engineering
- > Urban data modelling
- > Urban models: history and critical analysis
- > Project 1
- > Building Information Modelling
- > Image analysis and processing
- > Urban policies
- > City representation
- > Project 2
- > Internship



INDUSTRY SECTORS

- > Local or regional authority (Nantes Métropole, etc.)
- > Planning agency (AURAN, IAU etc)
- > Urban engineering consultancy
- > Companies in the digital sector such as Cap Gemini, Sopra, IBM
- > Architecture, engineering and building firms: Suez, Vinci Construction, GRDF, Artelia, NGE
- > Research bodies (IGN, CNRS)

CAREER PROSPECTS

- > Urban data officer
- > Geomatic engineer
- > 'Smart city' project manager
- > Heritage project manager
- > Planning engineer
- > BIM manager

TEACHING STAFF

HEAD OF SPECIALISATION:

Myriam Servières

LECTURERS:

Jean-Marie Normand, Jean-Yves Martin, Guillaume Moreau, Said Moussaoui, Myriam Servières, Vincent Tourre

LECTURERS ENSA NANTES/AU CRENAU :

Ignacio Requena-Ruiz, Pascal Joanne, Laurent Lescop, Daniel Siret

EXTERNAL SPEAKERS

Gwendal Petit (UBS), Gilles Gesquière (LIRIS), Valérie Renaudin (Gustave Eiffel University), Laurent Vigneau (Artelia), Hugo Mercier (Oslandia), Nicolas Chavent (OSM), Matthieu Mosser (Siradel), Carole Bodilis (Open Data Soft), Youssef Diab (EIVP)

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EXAMPLES OF PAST PROJECTS

- > A dynamic interface for analyzing the public transport network load in the Nantes conurbation (in partnership with AURAN)
- > Definition of indicators for urban ambience (with the research laboratory CRENAU)
- > Development of indicators for 3D urban data (with Oslandia)
- > Representation of mobility and accessibility using an interactive 3D isochronous representation (with Siradel)
- > Cartographic representation of a pollution sensor dataset on Rennes resulting from a collaborative acquisition
- > Decision support, electrical power calculator and cartographic proposal for a tool for the electrical supply of real-estate projects (with Nantes Métropole)
- > Exploiting 12 years of bicloo data (Nantes Métropole)
- > Search for future «green» areas in Lyon (LIRIS)

EVENTS

- > CityLab Alliance with 10 partner companies
- > Workshop Mobiance: pedagogical research workshop on Mobility, Ambiances and Urban Design

EXAMPLES OF PREVIOUS INTERNSHIPS

- > Design, build and integration of GIS (Sopra Nantes)
- > Creation of an IT tool for feedback and testing of geomatic techniques for decision-making in order to prioritize the handling of industrial risks. (GrDF Paris)
- > Construction of 3D models, design and administration of spatial databases and development of operational tools (ForCity)
- > GIS/Smart Cities Consultant (Sopra)
- > GIS configuration of roadside trees (local authority)
- > Design and implementation of a style model adapted to a 3D web application (IGN-COGIT)
- > BIM Development in Digital Services (Vinci Construction)
- > Construction of BIM digital heritage and management of real estate databases (Foundation)
- > Development of an urban planning GIS (city of Redon)
- > Cartographic retranscription of illumination measurements (SPIE)
- > Analysis of local energy consumption according to the hourly activity profiles of users in the area (EDF)
- > Tramway and surface transport project, participation in eco-design studies (AEGIS Rail)
- > Issues, uses and limits of the urban digital twin: exploration of potential applications for modelling the city in summer (Nantes Métropole)

