

# Master of Science - CGE in Smart & Resilient Cities

ENGLISH  
TAUGHT  
PROGRAM

This master's degree prepares students to develop urban areas by integrating energy usage and efficiency, the use of new energies and technologies, and environmental planning into their thinking. The course also enables future professionals to be involved in the conception of complex and multi-disciplinary city projects by developing a holistic approach and blending together technological and social parameters. Our modern and pragmatic study program, combining architecture and engineering, personal development and technical expertise, trains professionals who are able to produce these collaborative results.

## active pedagogy

Our cross-disciplinary faculty, illustrious guest speakers and different immersive learning methods will stimulate creativity and the necessary problem-solving skills for designing cities in a world perpetually in motion. Our Smart & Resilient Cities program is built in projects. Studio workshops are proposed on a real site with the associated actors (1 studio/year). The students will propose and design eco-districts and buildings, taking into account environmental issues, integration and context (social, economic, landscape), and architectural quality in a broad sense.

Students will participate in an intensive international learning trip to discover innovative ecosystems in cities such as Montreal, Barcelona, Nice... From its' ideal location at the heart of Europe the Smart & Resilient Cities Program will integrate exploration trips from Lille to other European cities.

## **LEARNING BY DOING**

- Experimental Approach
- Studio Workshops
- Learning expeditions
- Field trips
- Major urban challenges conferences/International conferences
- A dedicated studio space for the master's
- A co-design centre
- A FAB-LAB
- Projects and exchanges with innovation learning centers hubs

## projects

Semester-long team projects are an integral part of the curriculum. One day a week is dedicated to group projects in collaboration with a professional expert, partner company, or research institute and supervised by a professor.

## **EXAMPLES OF PROJECTS**

- New housing complex on the theme of the "silver economy" in Arras
- Renovation project for an existing neighbourhood in Fives Cail
- Proposed development of the future site of the Saint Sauveur station, Lille
- Green, smart & people friendly proposal for the city of Fourmies
- Garden cities to inspire the 21<sup>st</sup> Mont de Terre site, Lille
- Smart & resilient Cities, Lens

## internships

Students spend 40% of the program immersed in real professional experience. These internships, carried out either in France or abroad, in a company or a laboratory, expose students to the reality of working in the field and on research, and prepare them for entry into the global workforce.

## **EXAMPLES OF INTERNSHIPS**

- Innovation and change Management
- City Planning Management for Eco-Districts in local, regional and national government
- Project Development Management in Sustainable Urbanism and Architecture
- Project Manager in Design: EcoConstruction, Environment, Transportation and mobility

## become a specialist

During the two-year program students deepen their knowledge of technical, social and economic aspects on:

- **Sustainable urbanism:** Understand the sociology of urban development, protocols and accords; urban Planning and land use, urban projects; history of urban development, dynamic and multidisciplinary approach of eco-districts.
- **Building sciences:** Develop skills to perform building energy audits, diagnostics, climatic engineering, and modelization, energy requirements and building renovation.
- **Innovation in an urban context:** Master the tools, concepts, advantages and limits of project management and implementation, collective intelligence and collaborative projects, project organizational dynamics, computer assisted decision making and Building Information Modelling.
- **Tools for engineering management:** Innovation management, Team management and Project management.

## your career prospects

The Smart & Resilient Cities master has an outstanding faculty and regularly provides lectures from some of the best professionals in the field – as well as many opportunities to interact with important companies and be noticed by them.

There is always a lot of activity going on at the JUNIA Campus and strong relationships are built with the “real” world. During your master you are very likely to encounter a large range of professionals.

## Practical information

### admission requirements

- Bachelor's Degree (or equivalent) in the field of Engineering, Architecture or Urban planning
- English level certified by an official test: IELTS, TOEIC, TOEFL IBT or FIRST
- French is not required for admission, but recommended

### application procedure

- Complete your online application on [junia.force.com](http://junia.force.com)
- Have an individual interview (video conference)
- Application deadline: **May 15<sup>th</sup>, 2023**

### financial aspects

#### Fees and other expenses

- 2-year Program Costs: €18,000
- Living expenses in France: approx. €850/month
- Miscellaneous fees (insurance, visa...): approx. €650/year

### MASTER 1

		ECTS
Fall Semester	Studio	5
	Innovation & The City	6
	Green Building & New Spaces	5
	Environmental Urban Design	5
	Smart & Sustainable Mobility	4
	Communication & Corporated Tools	5
Spring Semester	Studio	5
	Smart Energy	8
	Connected City	8
	Major Urban Challenges	5
	Governability & New Business model for the city	4

### MASTER 2

		ECTS
Fall Semester	Studio	5
	Environmental Urban Design	4
	Major Urban Challenges	5
	Governability & New Business model for the city	2
	Low Carbon & Sustainable City	4
	YES INNOVATION Project	10
Spring Semester	6-month Internship in a company, a professional organization or a lab, Report	30

Course details are subject to change, please visit [junia.com](http://junia.com) for the latest information

#### Scholarships and financial aid

- \*Scholarships: refer to your local French Embassy or Campus France office
- Paid internships if carried out in France: min. €555/month
- French government housing allowance: approx. 90€/month

### international student services

#### Dedicated support just for you

- Reservation of accommodation in a student residence
- Administrative procedures (visa, resident permit, etc.)
- Integration into student life (associations, activities, etc.)
- Welcome session: French language, intercultural communication, orientation week, and more.

**JUNIA** Grande école d'ingénieurs  
HEI · ISEN · ISA

#### JUNIA INTERNATIONAL OFFICE

13 rue de Toul - 59014 Lille Cedex FRANCE  
T: +33 (0)6 77 43 94 46

🌐 [junia.com](http://junia.com)

✉ [international.information@junia.com](mailto:international.information@junia.com)



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