

INSA

INSTITUT NATIONAL
DES SCIENCES
APPLIQUÉES
LYON

SMART LYON 2020

MARCH 9th – MARCH 20th

Learn about Smart Cities
and French Culture !



LYON - AN ESSENTIAL EUROPEAN CITY

Lyon is the 3d most important city in France. Located in the heart of the thriving Auvergne-Rhône-Alpes Region, the city was classed a World Heritage Site by UNESCO in 1998. Ancient Capital of the Gauls, there are 2,000 years of history here. Lyon, known for a long time for its culinary culture (world gastronomy capital), has been named « France's 1st City of culture outside of Paris » and « 2nd Artistic City in France ». Lyon is well known for its Light Festival, which run each year in December.

Lyon has also been ranked as the « Best European destination for weekends excursions » in 2016.

Aside the touristic and cultural attractiveness of the city, Lyon is also a major hub in different sectors: Life Sciences, Clean technologies, Tertiary sector, ITC to name a few. A large and diverse set of actors around Smart Cities: the metropolis of course but also associations clusters of compagnies. The many universities in Lyon-St Etienne, INSA Lyon included, are federated into pluridisciplinary research and teaching programs.

The city is also home to internationally-renowned companies and major players such as Sanofi, Mérieux, Lafarge, GL Events, Bank of China, Solvay Rhodia. In addition, many world-renowned organizations have chosen Lyon as the location for their headquarters Handicap International, World Health Organization, CIRC (International Cancer Research Center), Interpol, Euronews.

Lyon is also a favorite city for foreign students who represent 10% of the student population in Lyon and strengthen the city's international character.

INSA Lyon – A LEADING ENGINEERING SCHOOL IN FRANCE AND IN EUROPE

Founded in 1957, INSA Lyon is one of France's leading Engineering Schools and counts more than 6,200 students out of which 1,700 are international - a point that was recognized in the last 2020 QS World University Ranking¹. INSA Lyon is known for its high level of training but also its strong humanist values and rich campus life (largest Student Union in France).

Most of students are spread throughout 9 engineering departments (Master's degree students) and 8 doctoral schools (PhDs).

Internationalization is a prime concern, many courses are offered in English and international profiles increase yearly.

INSA Lyon SHORT PROGRAMS

INSA Lyon has launched 3 short programs in order to meet international expectations:

- SMART Lyon in February-March (2 weeks)
- INNOV@INSA in May-June and in June-July (4 weeks)

¹ Rank 130 out of 1620 universities in the International Student indicator

Students experience a short-term program at INSA Lyon, located in France's Capital of Gastronomy. They will learn new skills, earn credits while creating bounds and expanding their network. Our short programs are a stepping-stone for further studies and a boost for their career.

Since 2016, 175 students coming from 24 universities took part in one of the three programs.

SMART Lyon is among one of this program. Previously called Discover Lyon, which was more a broad-based program, SMART Lyon has been re-focused on an engineering topic: SMART CITIES.

During the 2 weeks of the program, students have

- 18 hours of SMART CITIES lectures
- 12 hours of French as a Foreign Language lectures

Industrial visits are also including in the program. Speakers from each lecture will evaluate students, and 2 ECTS credits will be allowed if students succeed.

Aside of classes, students will enjoy some cultural and social activities listed in the flyer.

The SMART Lyon program is opened to undergraduate students with an engineering or science background.

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If you have any questions about the SMRT Lyon program, please do not hesitate to contact Hervé RIVANO herve.rivano@insa-lyon.fr or Céline GAGNARD celine.gagnard@insa-lyon.fr

COURSES

I - SMART CITIES

Hours and Credits : 18 contact-hours - 1ECTS Credit

Prerequisites : notion of C or Arduino Programming

Language : English

Academic Coordinator : Hervé Rivano, University Professor at INSA Lyon / Head of the Inria/INSA Lyon common team Agora of the CITI lab – herve.rivano@insa-lyon.fr

Instructor, Section:

Gilles Gesquière – gilles.gesquiere@universite-lyon.fr

Instructor Section :

Oana Iova - Oana.Iova@insa-lyon.fr

Instructor, Section:

Thierry Joliveau - thierry.joliveau@univ-st-etienne.fr

OBJECTIVES AND METHODS

The objectives of the course are to give an overview of technical, societal and ethical issues of Smart Cities with a major focus on connected devices and data processing. Besides, a spatial approach will be presented as well as the complementarity between scientific discipline.

Half of the course are lectures, one third are hands on sessions where the students are guided step by step toward building their potentially first connected device using LoRaWan networks and collecting then processing the data. The remaining are visits of industrial and urban sites that are emblematic of Smart Cities principles and international business.

CONTENT

- Introduction to Smart Cities issues
- Low Power Long Range wireless networks for Smart Cities
- Hands on LoRa (2 sessions)
- Geomatics and spatial smartness
- Augmented cities
- Industrial Visits
- Visit of the Confluences district, former industrial district renewed as a very new business district, with modern and environmental friendly conceptions

FINAL EVALUATION

This is an entry-level course. The students will work on a mini-project involving connected devices, monitoring sensors, data collection and processing which will be the basis of the evaluation.

II - FRENCH AS A FOREIGN LANGUAGE

Hours and Credits : 15 contact-hours - 1 ECTS Credit

Prerequisites : none – please specify your level in French when applying

Language : French

Academic Coordinator : Elisabeth Aumeunier, Professor of French for international students at INSA Lyon - Head of the French as a Foreign Language Service – elisabeth.aumeunier@insa-lyon.fr

OBJECTIVES AND METHODS

The focus of this unit will be on the oral French used in daily life. Using action-based language teaching methods, this class will require the students to use the French they learn in various situations both during in-class activities and in real-life situations on-site in Lyon. The overall goal is to introduce the students to various cultural aspects of life in Lyon.

FINAL PROJECT

During the final class, the students will go on a shopping trip to [Les Halles de Lyon](#) with their teachers where they will be expected to use the language skills they have acquired to find their way from the INSA campus to [Les Halles](#) and once there, to interact appropriately with the vendors in order to greet, explain their needs, taste local products and make their purchases.

Examples of on-site activities:

- A neighborhood treasure hunt: finding your way around and learning about the neighborhood
- Discovering French lifestyle, shopping at a street market, going to a café...

Some of the linguistic tools necessary:

- Greeting and taking leave
- Introducing yourself
- Describing where you are and how to get where you are going
- Express your preferences and personal tastes
- Sample, order, purchase, pay

CONTACT AND USEFUL INFORMATION

European Emergency Number : 112

Address nearest hospital : Medipole Lyon Villeurbanne 158 rue Léon Blum 69100 Villeurbanne

Phone nearest hospital : 04 87 65 00 00

INSA Lyon address :

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