



2<sup>ND</sup> AND 3<sup>RD</sup> YEAR SPECIALISATION

# CIVIL ENGINEERING & SUSTAINABLE CONSTRUCTION

Master the design, construction and operational phases as well as rehabilitation and demolition, taking account of the durability of materials and of environmental risks (e.g. seismic risk).



## COURSE CONTENT

### SEMESTER 1

- > Civil engineering materials
- > Structural calculations
- > Methods and management
- > Soil and rock mechanics
- > Reinforced concrete
- > Case studies
- > Geotechnical engineering
- > Mechanics and physics of materials
- > Project 1

### SEMESTER 2

- > Eco-construction and mixed construction
- > Structural design
- > Transportation infrastructure
- > Earthquake engineering
- > Project 2
- > Internship





## EXAMPLES OF PREVIOUS PROJECTS

- > Design and construction of an office building: in response to a call for tenders (Bouygues)
- > Behaviour of superficial foundations and piles
- > Design and construction of an underground car park: in response to a call for tenders (Bouygues)
- > Modelling of concrete creep in deep storage centres

## INDUSTRY SECTORS

- > Public works and buildings
- > Construction
- > Risk management
- > Recruitment across all company sizes from multinationals to national and local SMEs etc.

## CAREER PROSPECTS

- > Construction project management
- > Civil engineering risk management
- > Consultancy
- > Methods
- > R&D in civil engineering

## TEACHING STAFF

### HEAD OF SPECIALISATION:

Syed Yasir ALAM

### LECTURERS:

Syed Yasir Alam, Frédéric Grondin, Benoît Hilloulin, Panagiotis Kotronis, Ahmed Loukili, Anne-Laure Fauchille, Emmanuel Roziere, Giulio Sciarra, Ioannis Stefanou

### CONTACT :

syed-yasir.alam@ec-nantes.fr

## EXAMPLES OF PREVIOUS INTERNSHIPS

- > Ensuring production quality control for the different phases of pre-stressing
- > Project management - design and operations of Bouygues Telecom site development
- > Project management - underground tunnel construction work
- > Thermo-mechanical modelling of bituminous materials
- > Modelling of a full-scale test of crack growth under traffic on bituminous roads



graduate programme | Ingénieur grande école

Ecole Centrale de Nantes. Direction de la communication. 2023