



**l'École des Ingénieurs
de la Ville de Paris**

Department Public Space

Public Space Division : courses and projects

First year

- 2 Urban form and society
- 3 Architecture
- 4 Regulations for establishments open to the public, emergency acces

Second year

- 5 Regulatory and Operational urbanism
- 6 Urban planning social sciences
- 7 Public space

Third year

- 8 Landscape
- 9 Lighting
- 10 Urban space project
- 11 Urban Roads
- 12 Transportation planning
- 13 Urban Mobility Organization

First year

Urban form and society

Objectives

Understanding and learning the process of cities construction, to be able to read the complexity of “the urban landscape”. Teaching students the basics of architecture: Remind them the great architectural movements, and the technical developments and evolution. The importance of observation and its restitution (learning scale ratios, the basics of drawing, perspective).

Allowing the student to analyze an architectural design, propose and support an architectural project, doing the project’s master plan, and the 3d model.

Target skills / Learning outcomes

Understanding the history and development of territories, cities and urban spaces.

Program

- Introductory elements : The construction of larges cities shows part of its technical history. It also takes part into the evolution of thinking
- The constitution of urban areas : The experience of rural areas, organic and artificial cities
- The process of Agrarian land’s colonization
- The study of city maps
- A city of creation : Barcelona in the nineteenth century
- A city without a plan : Paris from its origins in the nineteenth century, and Paris, the capital of the nineteenth century
- The Paris Cadaster
- History of the street : From the antiquity to the nineteenth century : Fortunes and misfortunes
- Public space : The requalification of public roads and tram
- The architecture and the city
- The greats periods of the Architecture
- Comparison of architectural works
- The organization of the built environment
- Vocabulary building

Organization of the course

Number of hours : 30h
ECTS : 2
Evaluation : Knowledge

First year

Architecture

Objectives

This theoretical approach to education is designed to give a series of benchmarks related to the fundamentals of architecture, and among other things, the concepts of sustainable development and environmental quality. It aims to :

- The introduction to the evolution of architectural construction in Europe
- The analysis of theoretical concepts and general principles of contemporary compositions
- The development of critical knowledge in relation to unsustainable architectural concepts
- The initiation of engineering students into articulating the buildings observation, their forms, and their organization, related economic, social, environmental and cultural criteria.

This course intends to submerge the student in a context of workshops and construction projects involving different types of approaches, disciplines and expertise. It is also organized around some important principles: understand the changes of current practices in the field of the environmental building, to understand the technical and architectural solutions adopted to meet the requirements and objectives of environmental management projects, and understand the issues faced by professionals in architecture.

Target skills / Learning outcomes

Mathematics applied to computer science.

Program

- Introductory elements : the construction of larges cities shows part of its technical history. It also takes part into the evolution of thinking
- The constitution of urban areas : the experience of rural areas, organic and artificial cities
- The process of Agrarian land's colonization
- The study of city maps
- A city of creation : Barcelona in the nineteenth century
- A city without a plan : Paris from its origins in the nineteenth century, and Paris, the capital of the nineteenth century
- The Paris Cadaster
- History of the street : from the antiquity to the nineteenth century : fortunes and misfortunes
- Public space : the requalification of public roads and tram
- The architecture and the city
- The greats periods of the Architecture

- Comparison of architectural works
- The organization of the built environment
- Vocabulary building

Organization of the course

Number of hours : 30h
ECTS : 2
Evaluation : Knowledge

First year

Regulations for establishments open to the public, emergency access

Objectives

Acquire risk prevention knowledge, the existing devices and their effects on buildings and urban projects.

Target skills / Learning outcomes

Precise knowledge of regulations in ERP operations.

Program

- Studied areas characteristics
- Data collection and sample processing
- Flood risks prevention
- Safety rules applications to public places (fire hydrants, perimeter protection, ...)
- Impact studies
- Review of policy prescriptions

Organization of the course

Number of hours : 21h
ECTS : 2
Evaluation : Written exam

Bibliography

Mohamed Chachoua : Introduction à la programmation impérative, fonctionnelle et objet. Cours et exercices. EIVP 2005, 154 pages

Second year

Regulatory and Operational urbanism

Objectives

The course aims to teach the students the practical aspects of planning law to enable them to participate in the planning, implementation and monitoring process, as well as to give them the basic fundamentals of planning regulations, their implementation and monitoring.

Target skills / Learning outcomes

Knowledge of planning law.
Knowledge tools urban.

Program

- Planning and urban regulations: Territorial coherence scheme(SCOT), Urban local plan (PLU), Project planning and sustainable development (PADD), area of protection of architectural urban and landscape (ZPPAUP)
- Permissions land: Urbanism certificate, building permits
- Land intervention: urban pre-emption, urban development zone (ZAD), the urban project (DUP)
- The development process, the Solidarity and urban renewal law
- Operational tools: development program (PAE), Financial participation of new routes and network (PVNR)
- Soil occupancy permit: building permit, subdivision approval, fencing, caravan's parking, temporary roads, demolition permits, planning certificates
- Pre-emption zones (definition, application field)
- Deferred urban zones (definition, field, evaluation, propriety evaluation)
- The expropriation for public use (general presentation, process, administrative and judicial phases)
- Development process for private initiative
- Development process for public initiative : Collaborative planning area (ZAC)
 - Presentation of the ZAC
 - The different kinds of ZAC
 - Creation process
 - Monitoring implementation process

Organization of the course

Number of hours : 36h
ECTS : 2.5
Evaluation : Knowledge

Second year

Urban planning social sciences

Objectives

Develop social science knowledge to determine the characteristics of a neighborhood.

Target skills / Learning outcomes

Understanding of the societal context of its development.
Knowledge of the social analyzes at different scales.

Program

- Overview to the contribution of social sciences to construction projects : Urban projects objectives, and the concepts for the analysis of these projects. (sustainable development, large territories, economic development, time constraints management)
- Who does what in development : What is project management ? Who are the actors in urban development project ? What are their roles ?
- Local and municipal services, Governmental and public agencies, urban developers (EPA or private institutions)
- Consultation process, objectives, and the interest of participatory approaches, and their contribution to the quality of projects.
- The initial situation of some specific area, and the contributions of demographic and statistical knowledge
- The notion of diagnosis in urban planning
- Housing issues and the public strategies : Council housing, public housing, the associations role
- Suburbs : What do we do in the neighborhoods ?

Analysis of the urban environment :

- Political representation and local authorities
- Population areas
- Resident populations (recognition, belonging, transmission)
- Migrant population
- Territory, public spaces, private space, access
- Risk and economic analysis
- Employment (type)
- Insecurity

Communication and negotiations :

- Prevention strategies tests
- Risk prevention
- Prevention and safety
- Networking and collective choices
- Social mediation
- Conflict detection
- Problems analysis
- Community involvement

Representation of the analysis, diagnosis, solutions :

- Data graphical representation
- Realization of reflection patterns
- Synthesis and orientation

Organization of the course

Number of hours : 30h

ECTS : 2

Rating : Urban analysis, mini-project

Second year

Public Space

Objectives

This course gives students the tools to analyze and compare different urban development while integrating sustainable development issues.

The objective of the course is on the one hand, to compare different programs and projects to make and invent new urban and architectural models and secondly, to encourage students to integrate the criteria of environment and development sustainable in their work.

Target skills / Learning outcomes

The acquisition of tools and methods needed for the project approach.
Knowledge of public spaces at different scales.

Program

- Session1 – Introduction to public space
- Session 2 – Public space, crucible of social identities
- Session 3 – The public space by geography and landscape
- Session 4 – The public space: General interest and private economy
- Session 5 – Public space representation
- Session 6 – Public space and sustainable development

This course is divided in two parts, the first one, a brief history of urban planning theories, and practices in Europe. The second one, it's the student research of the connection between architecture, public space and development.

This course also introduces, a selections of representatives urban projects, urban renewal, cities expansion, cultural projects and transports. Several aspects of urban life are also examined: transport, commerce, culture, housing, services, etc. .

Different examples (Bilbao, Kop van Zuid, Euralille. . .) of realized projects develop the idea of public space, urban relation, urban forms, and architectural typologies.

Finally, the student will learn the definition of sustainable urban development in questioning the structures and forms induced by its requirements such as :

- Contemporary trends of urban ecology ; emergence criteria, concepts and doctrines
- Modes of land use (density, diversity, ...)

Organization of the course

Number of hours : 30h

ECTS : 2

Rating : Urban analysis, mini-project

Third year

Landscape

Objectives

Enable engineering students to enhance project management with a staging of the city through the urban landscape.

Target skills / Learning outcomes

Within the sessions of the Urban Space Project, advice and assistance are provided to students in reading the components of the landscape.

Program

Landscape reading :

- Spatial reading
- Scale reading
- Urban places
- Linear infrastructure

Gardens language :

- Landscape optical corrections
- Composition elements
- Relation "use/destination"

Urban planning :

- Water management (sanitation, permeability)
- The pedestrian movements (accessibility, management, protection)
- The kids in the city
- Night landscapes

The project approach :

- Preliminary phase
- Analysis / Diagnosis
- Sketch
- Draft / Project
- Direction / Reception

Organization of the course

Number of hours : 12h

ECTS : 0.5

Evaluation : Report Engineering Project Urban Space

Third year

Lighting

Objectives

Form trained students in the lighting field, and in the role of light in urban development.

Target skills / Learning outcomes

Within the sessions of the Public Space Project, help and advice will be given to students in the field of light, with implementation classes.

Program

- Light physical characteristics
- Description and performance of materials used for lighting lamps
- Lighting systems and wiring diagrams
- Operating constraints of lighting installations
- Criteria for siting
- Photometry : Luminous flux distribution principles and rules for calculating lighting levels (illuminance and luminance)
- Description of a lighting plan and construction principles
- Highlighting monuments, illustrated by recent examples
- Implications of lighting in Sustainable Development

Organization of the course

Number of hours : 12h

ECTS : 0.5

Rating: Calculations with application exercises photometric values in different scenarios and compared Engineering Urban Space Project

Third year

Urban Space Project

Target skills / Learning outcomes

An order from a local community allows to test all the know-how acquired. The objective is that students can initiate the path of a project manager in charge for a solution to an urban problem.

Program

- Diagnosis
- The overall project by establishing a general schema
- Public space development

Organization of the course

Number of hours : 63h

ECTS : 10

Rating: 50% document(s) Written(s), 50% defense

Third year

Urban Roads

Objectives

Provide students with the knowledge of urban roads field, enabling them to conduct a study. Integrate the crossed logics of public spaces development, the concepts and technologies. Control the balance between the conceptual and functional aspects, considering the diagnosis aspects, operation and coordination of urban infrastructure, including some cost ratios.

Program

- Generalities , objectives and urban road specifications
- Roads surfacing
- Roads foundation : design, implementation
- Road geometry and layout
- Road maintenance :
 - Concepts and tools
 - Techniques
- Studies, research and quality urban roads
- The urban road environment : resources, noise, water, wastes
- Road network, coordination, and construction sites
- Urban transport plan

Organization of the course

Number of hours : 15h
ECTS : 2

Third year

Transportation planning

Target skills / Learning outcomes

Knowing the institutional framework of the organization of transport in France and understand its peculiarities in Ile-de-France.

Control mechanisms for determining the demand and supply for public transport in urban areas.

Determine size and network transit.

Program

- Institutional framework : Institutional, regulatory and legislative framework, LAURE, Loti, etc..
- Planning documents : PDU, SDRIF, PLD creation and revision
- Modal choice : The hierarchy
- The analysis of travel surveys, modeling, etc..
- Determination of Transport Services : Maintenance of a public transportation line
- Transport economy : Ticket, socio-economic balance
- Modes of transport : Their relevance (metro, BRT, Tram, RER, bus, etc.)
- Transport plans, case study

Organization of the course

The entire course is taught by four teachers, making separate statements about the following topics:

- Institutional organization
- Urban development plan (PDU), other planning documents
- Modes hierarchy
- Networks restructuring
- Motion analysis
- Type of Inquiry (OD, VP, Cordon, households)
- Modeling methods for heavy buses
- Different types of mode
- Flow volumes by mode
- Carbon equilibrium
- Transportation plan
- Transport network operation
- Operating costs, pricing, ticketing
- Socio-economic balance

Number of hours : 15h

ECTS : 2

Evaluation : The evaluation is done on the basis of a common test by all the teachers. It is the realization of a mini project on the theme of transport, in groups of five or six students. The beginning of the test takes place during a specific session of 1:30, during which, students can ask teachers to present the subject.

The paper will be hand it over to two weeks after and with an oral to one of four professors who pose questions about the project and the course offered.

Third year

Urban Mobility Organization

Target skills / Learning outcomes

Set size and circulation spaces.

Develop public space in terms of displacements.

Master regulatory tools, markings, vertical tricolor micro and macro control.

Program

- Definitions, objectives : Context and traffic policies
- Traffic and urban landscape : Reconciling development devices and signalization with the urban
- Architecture
- Traffic and users : The facilities for cars, buses, bicycles, pedestrians
- Sharing public space : The different status of circulation patterns
- Legal aspects : Regulations, laws, etc. . .
- The traffic lights : Use matrix conflict diagram lights
- Adaptation of traffic lights : Micro and macro control

Organization of the course

Number of hours : 15h

ECTS : 2

Evaluation : The test is based on a mini project to redevelop a site chosen in Paris around a cross with traffic lights. The beginning of the test is during one first session. Each group of about 5 students is assigned a different site. Halfway through the sessions, a first report on the diagnosis and management assumptions is done and discussed by the group. One first grade is assigned. In the penultimate course, students must make a specific project with diagram traffic lights. This made the subject for a second note.