



Executive Master

Resilient and Carbon-Neutral Cities



WHAT ARE THE CHALLENGES?

- A World of Cities: 70% of population to live in cities by 2050
- EU to become the first climate neutral continent by 2050 - intermediate target of cutting greenhouse gas emissions by at least 55 percent by 2030 compared to 1990 levels
- Net zero Cities : reduce/avoid and then offset CO2 emissions, key for the world energy transition
- Resilient : adapt to climate change, and build back better after crisis
- Urgent need of knowledge sharing, education and training of professionals and stakeholders globally
- Executive Master “Resilient and Carbon-Neutral Cities” as a response to Humanity’s Challenges



PRACTICAL INFORMATION

AUDIENCE	A University degree in Engineering, Business, Economics, Urban Planning, Architecture or a related field. English language skills sufficient for Master's studies
LOCATION & LANGUAGE	Online & in English (International possibility)
PERIOD	SEPT -> JAN 2023 60h ->30 credits Tuesday (4PM / 7PM - Brussels time)
PLACES	Maximum 50
FEES	Course fee: 2295 euros Reduced fee for faculty and alumni of the Faculty of Architecture La Cambre Horta: 1795 euros
MODULES	8 Modules + integrative seminar + Master Thesis (TFE) + Possibility of ENGIE internship



WHY TO PARTICIPATE?

1. AN UNIQUE EXECUTIVE MASTER

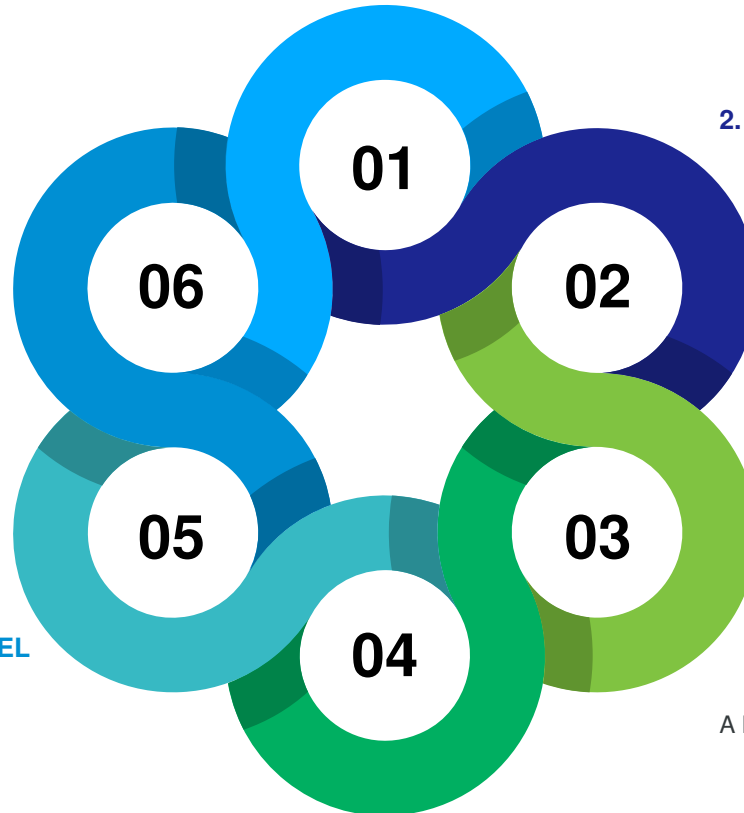
ULB & ENGIE united in this co-construction initiative with one objective to answer: *what are our priorities for Resilient and Carbon-Neutral Cities?*

6. INTERACTION WITH INTERNATIONAL UNIVERSITIES & ORGANISATIONS

SciencesPO, ULB, ENGIE, EU Commission, UN-Habitat, Partner Universities

5. RECOGNISED INSTITUTIONS AS LABEL

EU Commission New European Bauhaus, UN-Habitat World Urban Campaign



2. SPEAKERS IN THE HEART OF THE TOPIC

International speakers & experts as animators to respond to the major issues & priorities around Energy and Resilience Topics

3. INTERACTIVE COURSE

A real dynamic of the course through understanding, identification and animated workshops

4. CONCRETE CASES

A learning mix with concrete cases to animate the subjects & the theory

EXECUTIVE MASTER – 8 Modules

MODULE 1

Introduction to the concept of resilient and net zero city

MODULE 8

Master Thesis (TFE)

MODULE 7

Integrative seminar

MODULE 6

Implementing and financing resilient and net zero cities



MODULE 2

Resources and Energy dimensions in urban fabric

MODULE 3

Net zero Approach

MODULE 4

Resilient and Net zero methodologies and tools

MODULE 5

Nature-Based Solutions and Green Infrastructure

MORE INFORMATIONS

For more information on the program

- Executive Master Program – in appendix
- [\(!\) ULB web site \(!\)](#)

For more information on registration (session started in SEP 2022)

- Your HR (For ENGIE)
- Amaury MARTINEZ
(amaury.martinez@tractebel.engie.com)



What about our Modules?

EXECUTIVE MASTER - SESSIONS	Learning Acquis	
MODULE 1	1. Introduction to the Executive Master, general notions of urban resilience, net zero and current challenges of urban humanity	Identifying, understanding and describing the notions of resilience and carbon-neutral dimension
	2. New technologies - Intelligent Cities and Artificial Intelligence - Power of Urban Innovation - City as a System: 360° City Scan methodology	Understanding, discussing and comparing the new technologies and how they influence our urban systems
MODULE 2	3: Introduction of Energy markets and low CO2 materials - Intelligent Energy Blocks and networks, Smart Grids	Understanding, discussing and learning the building materials and their relationship to energy
	4: Energy efficiency approach - Positive Energy districts - Bold City Vision	Understanding, discussing and comparing local resources and materials

What about our Modules?

EXECUTIVE MASTER - SESSIONS		Learning Acquis
MODULE 3	5: Net zero, Carbon neutrality, Offsetting for Buildings and Industries	Identifying, understanding and describing the notions of carbon and the city dimension
	6: Net zero urban fabric & Urban Climate in developing countries - Low-carbon mobility	Concrete application
MODULE 4	7: Master planning for resilient cities	Understanding energy and positive energy systems, urban climate
	8: Master planning for net zero cities	Identifying, understanding and describing the notions of carbon-neutral strategies

What about our Modules?

EXECUTIVE MASTER - SESSIONS		Learning Acquis
MODULE 5	9: Vegetalisation systems - Carbon Capture systems - Environmental Management - Natural Resources Management	Understanding green systems and carbon capture, describing environmental management
	10: Green Infrastructure development and management - Advanced natural and environmental resource economics	Developing green infrastructure approach and urban ecosystem services
MODULE 6	11: Mutualization techniques - Governance and stakeholders' identification and management	Understanding and identifying stakeholders and management, developing governance approach
	12: Financial management of resilient and net zero city - Scientific evaluation - Carbon calculation - PPPs and other financial forms	Identifying, understanding and describing financial management of carbon-neutral dimension

MODULE 7
Integrative
Seminar



MODULE 8
Master Thesis