IGLUS EXECUTIVE MASTER
OVERVIEW

OVERVIEW OF THE IGLUS EXECUTIVE MASTER’S
Our Executive Master in Innovative Governance of Large Urban Systems (IGLUS) responds to today’s needs: growing cities evolve into metropolitan areas with their major infrastructures – transport, energy, buildings, water and greens – becoming increasingly interdependent, not the least because of the pervasive nature of the information and communication technologies. Managers and policy-makers concerned with such large urban infrastructure systems not only need to learn how to operate them, but must also become experts in maintaining, planning, and financing them in order to better respond to changing customer demand and evolving citizen needs. In short, the complexity of cities faced with ever more pressing challenges requires skills and expertise that our Executive Master’s program offers.

EFPL is amongst the world’s top 15 universities, according to QS2016 ranking, and ranks first among universities under 50 years old in the 2016 Times Higher Education ranking.

EPFL is also known as the most international university in the world.

Its reputation is built on the quality of its research and teaching.
The IGLUS Executive Master is geared at mid-career professionals seeking to obtain a comprehensive and professional approach to managing and governing urban infrastructure systems.

**WHAT IS THE BACKGROUND OF OUR PARTICIPANTS?**

- Urban infrastructure managers from various sectors (transport, energy, housing, water, waste, green infrastructures, etc.).
- Decision makers and public administrators.
- Entrepreneurs and start-ups engaged in smart city projects.
- City officials and public administrators.
- Urban planners, architects, and engineers.

**WHAT WE OFFER:**

- A comprehensive and global look at managing and governing urban infrastructure systems.
- A unique approach to cutting-edge strategies for managing and governing the transition from legacy to smart urban systems, and a thorough understanding of leading smart city projects worldwide.
- Professional skills for implementing systemic changes in your own city.
- A unique opportunity to learn about and critically discuss the experiences of selected global cities that participants will visit as part of their education.

The IGLUS Executive Master program consists of six action-learning modules of two weeks each, taking place every other month in:

- The United States (New York and Detroit)
- South Korea (Seoul)
- Mexico (Mexico City)
- Malaysia
- Europe (Dortmund and Barcelona)
- Turkey (Istanbul)
- Uganda (Kampala)
“I have been teaching for two years in the IGLUS Executive Master on Public Private Partnerships and optimization of existing transportation infrastructures; The IGLUS way of teaching city level public managers on how to make their cities smarter, more sustainable, more liveable and financially sound is something that I particularly enjoy. The lively discussions with students who bring in their own practical experiences, their diverse backgrounds and their pressing real life questions add much to the learning experience, for both the lecturers and the participants.”

Dr. Christoph Rothballer
Expert Principal - The Boston Consulting Group
Guest lecturer

The city of Detroit, Michigan, filed for bankruptcy on July 18, 2013. It was the largest municipal bankruptcy filing in US history, with debt estimated at $18–20 billion. American cities were among the first to face the challenges associated with de-industrialization, Detroit being a particularly well-known case. New York City avoided bankruptcy in 1975 and is today known as one of the most prosperous urban hubs in the world. But the United States have more to offer, especially in matters of metropolitan governance. Also, because American infrastructures are generally old and suffering from underinvestment, combined with the innovation dynamics of Silicon Valley, some US cities have also become testing grounds for new and smart infrastructure services, especially in the area of mobility. In the New York City and Detroit action-learning module, you will specifically find answers to the following questions:

1. How can cities recover from economic downturn and develop urban rejuvenation strategies?
2. How can cities finance aging urban infrastructures?
3. How can cities incorporate the ICTs and economic principles into aging urban infrastructures?

**INFRASTRUCTURE COVERED IN NEW YORK CITY AND DETROIT**
- Transport
- Housing
- Green infrastructures
- Water, waste and wastewater
“After attending my first module in Seoul, June 2016, I can say that the IGLUS Master is a great tool to find out and to learn about several subjects managed at a large urban scale and faced from public and private sectors’ points of view. Challenges for the present, and of course, for the future, taught by excellent lecturers in an amazing interdisciplinary academic atmosphere encourages to participate with the rest of students.

As one of the world’s leading ICT hubs, the city of Seoul has harnessed the potential of ubiquitous data and implemented numerous ICT-based initiatives to target typical urban problems such as energy conservation, public transportation, citizen safety, and transparency. With the launching of the ‘Smart Seoul’ program in 2015, the city has built on these foundations, as it strives to become one of the smartest cities in the world.

In Seoul, the ICTs and new technological innovations are not just add-ons to the city’s infrastructure. Rather, they have become an integral part of the urban fabric and constitute a core element of its infrastructure. With a strong history of leadership in matters of e-governance and smart city initiatives, the South Korean capital stands as an ideal location to discuss and learn about the underlying challenges and effective strategies to make cities smarter.

In our Seoul action-learning module you will specifically find answers to the following questions:
1. How can the ICTs be incorporated into urban infrastructure systems in order to make cities more efficient and resilient?
2. What role does metropolitan governance play in the development of a smart city?
3. What are the key elements of an urban digital infrastructure?

INFRASTRUCTURE COVERED IN SEOUL
- Transport
- Energy
- Green infrastructures
- Water, waste and wastewater
“What I like the most is that whilst having such important people as lecturers, most of them have the availability and kindness to answer questions, and even in many cases, to debate. I really appreciate having many different disciplines assembled in the same place and debating a topic from different (in some cases opposite) points of view. This is enriching and meaningful!”

Bertha Cuervas – Guadalajara, Mexico
Education: Bachelor in Statistics and Systems 
Diploma certificate in Human Development 
Profession: Volunteer in Social Assistance Center (ONI PEP)
Alumni of the 1st edition of the program

With more than 21 million inhabitants, Greater Mexico City is the largest metropolitan area in the Western hemisphere and one of the largest in the world. Challenges abound in the areas of water, housing, and transportation as a result of rapid population growth, pollution and industrial development. In the case of Mexico City, these challenges are amplified by its geographical location and exposure to natural hazards.

What is particularly striking in Mexico, as in many Latin American countries, is the active, creative, and innovative role played by the citizens and citizen associations in facing up to these challenges and developing citizen-driven governance mechanisms capable of improving performance and making urban systems more resilient. In Mexico City, you will also be exposed to some impressive innovations in urban infrastructure management and governance.

In our Mexico City Action Learning module, you will specifically find answers to the following questions:
1. How can citizen and stakeholder participation be facilitated in urban infrastructure governance?
2. How can urban infrastructure systems be made more resilient, especially thanks to citizen involvement?
3. How can the inherent complexities of mega-cities be faced?

INFRASTRUCTURE COVERED IN MEXICO CITY
- Transport
- Housing
- Green infrastructures
- Water, waste and wastewater
Abdulsalam Alshehhi
Ras al Khaimah, United Arab Emirates
Education: Bachelor of Electrical Engineering
Profession: Electrical Engineer in a private company
Alumni of the 2nd edition of the program

“I have been looking for such program long time ago, since I am not an urban planning major. I wanted to gain more knowledge about urban management and governance; yet most of the programs offered require semesters of attendance, which negatively affects my job. The IGLUS program is at the cutting edge of what I wanted. I think that the content of the program covers all aspects of urban management. I really appreciate the way the program has been designed.”

With nearly 200 million people migrating to urban centers in only the first decade of the 21st century, Asia has undoubtedly become one of the hotbeds of rapid urbanization. Malaysia is no exception to this trend. The country’s capital, Kuala Lumpur, is one of the fastest growing metropolitan regions in East Asia, both in terms of population and economic growth, and exemplifies the opportunities and challenges associated with such mass migrations. In addition, Malaysia is developing a greenfield smart city right across the waters from Singapore.

Kuala Lumpur and Malaysia stand as examples of successfully managing and governing rapid urbanization by providing its ever-growing population with quality infrastructures and services, while maintaining its position as one of the most competitive hubs in Asia. Taken as a whole, the situation in Kuala Lumpur exemplifies the challenges and opportunities associated with urbanization, and also provides you with the ideal context to discuss and learn about the process and challenges of creating greenfield smart cities.

In our Malaysia action-learning module you will specifically find answers to the following questions:
1. How can a city manage and govern rapid urbanization?
2. How can a city successfully build greenfield infrastructures?
3. How can smart cities be developed from scratch?

INFRASTRUCTURE COVERED IN MALAYSIA
• Transport
• Housing
• Energy
• Water, waste and wastewater
Europe is highly diverse and home to legacy cities, many of which are being challenged by industrial decline and urban sprawl. In parallel, the European Union is pushing its urban agenda aimed at decarbonization and competitiveness, not least thanks to its support for initiatives at the urban and metropolitan levels.

Dortmund is one of the cities that constitute the Rhine-Ruhr metropolitan area, with its 10 million inhabitants, characterized by its extreme poly-centricity. Historically developed around coal and iron, the Rhine-Ruhr metropolitan area is now undergoing profound industrial restructuring and, as such, has become one of the most interesting laboratories of metropolitan governance and transition to smarter and more sustainable energy systems.

Barcelona is another example of European metropolization, despite being built within the context of the dynamics of the Catalan region. Barcelona has spearheaded Europe’s ambition in matters of smart, resilient, and sustainable urban development.

In our Dortmund and Barcelona Action Learning module you will specifically find answers to the following questions:

1. How can cities foster metropolitan governance?
2. How can cities transition to smart, sustainable, and resilient urban infrastructure systems?
3. What does it take to transform industrial spaces into green public spaces?

**INFRASTRUCTURE COVERED IN DORTMUND - BARCELONA**

- Transport
- Energy
- Green infrastructures
- Water, waste and wastewater

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**Yannis Evmolpidis** - Athens, Greece
Education: master in Urban Planning
Profession: advisor to the mayor of Athens
Alumni of the 2nd edition of the program

“IGLUS is a very innovative executive master’s program, which brings together professionals from a wide variety of backgrounds. The program is structured in a country- and topic-specific way, addressing major urban issues of each metropolitan city. Each module provides a unique perspective on urban development combining theory with practice. Participation of major international firms and institutions also offers a practical approach to issues with real life solutions”
From Byzantium to Constantinople to Istanbul, this city has over 2000 years of history between Europe and Asia, with tradition and culture deeply engrained in its DNA. At the same time, Istanbul is becoming one of the world’s most modern metropolitan areas, known for its skyscrapers, world-class airports, iconic bridges and complex transportation networks, thus exemplifying the modern Turkey.

Where else than in Istanbul can one see as clearly the contrasts and the bridges between tradition and modernity, the East and the West, the religious and the secular, not to mention the geography characterized by fault lines (Bosphorus) and earthquakes, as well as its politically and socially highly dynamic environment? It is against this backdrop and the corresponding challenges that the city – and its metropolitan area with its 18 million inhabitants – constitutes one of the world’s most interesting place for successfully managing and governing urban infrastructure systems in times of transition.

In our Istanbul Action Learning module you will specifically find answers to the following questions:

1. How can cities use urban infrastructure initiatives to accelerate urban renewal and development?
2. How can cities effectively manage and make use of municipal companies?
3. How can cities preserve tradition, culture and nature while aggressively developing urban infrastructures?

**INFRASTRUCTURE COVERED IN ISTANBUL**

- Transport
- Housing
- Green infrastructures
- Water, waste and wastewater
“Sub-saharan Africa is urbanising rapidly with many of the opportunities and challenges associated with this. Such fast urbanisation is not unprecedented and African cities therefore have much they can learn from their counterparts across the world. At the same time, there are many innovations developed in African cities that will be useful for other cities facing resource constraints. A platform, like the one IGLUS Executive Master’s programme provides, that brings together such a diverse and multi-talented group of city practitioners is very well-suited to foster these cross-city learnings.”

Kampala is one of the fastest growing cities in the world. According to recent estimates, the night-time population is 1.5 million but this could reach 9.1 million people as soon as 2050. Kampala already produces over 60% of GDP for Uganda as a whole. Therefore, well-managed urbanisation provides the single biggest opportunity for growth for Uganda in the coming decade. Improving infrastructure to enhance connectivity and density will support productivity growth in the city and thus for the country overall. However, these improvements will require large investments. Therefore, the main questions in the context of Kampala are:

1. How can rapidly growing cities balance efforts between investing in infrastructure for the majority of the city that is still to be built in the future, versus retrofitting the parts of the city that are already there?
2. Which options do cities in resource-constrained economies have to finance infrastructure investments?
3. How can transportation and other infrastructures be introduced into already crowded environments?

**INFRASTRUCTURES COVERED IN KAMPALA**

- Transport
- Housing
- Water
- Energy
THE IGLUS EXECUTIVE MASTER IS BUILT ON A ROLLING BASIS, MEANING THAT YOU CAN ENROL ANYTIME.

ENROLMENT
Enrolment is possible anytime, provided the candidate has a minimum four-year bachelor’s degree plus five years of professional experience. Participants will have two years from their first day in the class (first day of the module with which they start the program) to complete all the requirements.

COSTS
• Tuition fee for the Executive Master’s course is 20'000 CHF; a limited amount of tuition reduction is available for qualified participants.
• Travel, accommodation, and other logistics costs will be at the expense of the participants.
• Tuition fee for attending in only one of the training modules is 3’000 CHF.

DEGREE REQUIREMENTS
In order to obtain the IGLUS Executive Master’s degree from Ecole Polytechnique Fédérale Lausanne (EPFL), participants must, within a period of two years from their first module:

• Follow two free massive open online courses (MOOCs) on managing urban infrastructures and smart cities, respectively, prior to taking the first module;
• Attend five out of the six modules;
• Write a 60-page master’s thesis.
IGLUS is a global action research initiative built around the IGLUS Executive Master. It is grounded in a solid conceptual framework and research agenda that links urban infrastructure management and governance to city performance, with a special focus on the role played by the information and communication technologies.

The IGLUS Action Research initiative and Executive Master’s program are offered by EPFL in collaboration with the following partners:

- UN-HABITAT
- THE WORLD BANK
- CITYNET
- MICHIGAN STATE UNIVERSITY
- CUNY
- MMU
- TU DORTMUND
- UPC
- TECNOLÓGICO DE MONTERREY
- SCB
- IBM
- TM
- BCG
- CEMEX
- VEOLIA
- Schneider Electric
- Keolis
For more information about the upcoming IGLUS training events, visit our website at www.iglus.org