International Master’s program

PROTOTYPING FUTURE CITIES

National Research University
Higher School of Economics,
Moscow

2019-2021
What will the city of the future be like? Which skills will professionals need to build a smart city? How will we operate at the intersection of technology innovation, urban design, business models, strategy and society? The international Master’s program in Prototyping Future Cities provides an integrated education with a multidisciplinary approach in relation to the urban project, technology, and urban studies. This program takes a holistic approach to the expansion and regeneration of cities and is intended to create a new type of professional who can develop any kind of project in order to lead urban transformation. Led by international experts and Russian scholars who are creating the agenda for smart city development, this program will teach you to understand the city at all scales and solve urban problems using technology.

ABOUT

‘Two-year master program ‘Prototyping Future Cities’ offers the opportunity to study the impact of information technologies on cities, based on the method ‘learning by doing’. The master takes place in the Shukhov Lab, international laboratory for experimental urban design, located in the center of Moscow, with access to advanced digital manufacturing machines where students can develop prototypes. The master covers a wide range of subjects, including Big Data, Urban Projects, Mobility, Economy and Housing, enabling students to lead urban transformation, both from the private and public sectors. We wait for you.’

Vicente Guallart
academic supervisor of Master’s program, former chief architect of Barcelona

PROGRAM INFORMATION

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<tr>
<th>Event</th>
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<tr>
<td>Application process starts</td>
<td>1 November, 2018</td>
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<td>Application deadline for local students</td>
<td>15 August, 2019</td>
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<td>Application deadline for international students</td>
<td>31 July, 2019</td>
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<td>Program starts</td>
<td>9 September, 2019</td>
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Field of Study: Urban Studies and Development
Language of Instruction: English
Duration and Mode of Study: 2 years, Full-time Program
Tuition Fee in 2019: 450 000 RUB a year
Scholarship: Enrollees who apply before 14 April 2019 and receive more than 70 points for their application portfolio will be given a 20% discount on the tuition fee.
What skills will I develop?

The Master's program curriculum and educational methods give students the ability to develop both hard and soft skills, which add value to their CV and prepare them for a successful career.

Learning by doing

The key learning principle of the program is learning by doing. In Shukhov Lab Laboratory for Experimental Urban Design students try new technology, prepare prototypes, investigate and analyze the city through data, and develop projects that come as a relevant response to the complex problems that affect modern cities.

International field trips

International field trips give young innovators the opportunity to learn about the most recent research and projects in smart city development, new technologies and self-sufficient building from the leading global experts.

Shukhov Lab

The Master's program in Prototyping Future Cities takes place in the Shukhov Lab at the Higher School of Economics in Moscow. The Shukhov Lab is one of the FAB LAB global network laboratories with a research and fabrication focus on experimental urban design. Fabrication of emerging prototypes is a key feature of the Master's program. In the Shukhov Lab, students have full access to technological resources, such as 3D printers, laser cutters, and CNC machines. Here young innovators bring the most adventurous and boldest architectural and design ideas to life and work closely with leading experts on a daily basis.

What skills will I develop?

The Master's program curriculum and educational methods give students the ability to develop both hard and soft skills, which add value to their CV and prepare them for a successful career.
TECH HARD SKILLS

Laser and vinyl cutting: materials, marking, engraving, folding, press-fit constructions

Electronics design, fabrication and programming

Computer aided design: raster, vector, 3D design, parametric design, game engines and simulations

3D printing: principles, processes, machines and software, and scales

Multi-axis industrial robots: scanning, milling

Scanning, projection mapping, augmented reality, computer vision

Many optional skills: city sensing, data visualization, drone operations and 3D

CNC milling: materials and scales

SOFT SKILLS

critical writing

strategic thinking

public presentation

hands-on

adaptability

multitasking

decision making

problem-solving

strategic thinking

problem-solving
COURSES

1st year

Semester 1 (09-12)
- Technology (Things@LAB)
- Management (New Business Models)
- Culture (Readings on Urbanity)
- Information (Recording Sociology)
- City project (Things)

Semester 2 (01-05)
- Technology (Resources@LAB)
- Management (Legal Regulations of Urban Development)
- Culture (History of Urbanism)
- Information (City Big Data)
- City Project (Buildings)
- Pre-Project
- International Field Trip

2nd year

Semester 1 (09-12)
- Technology (Communities@LAB)
- Management (Impact analysis)
- Culture (City Protocol)
- Information (Mapping Economy)
- City Project (Spatial Planning, Analysis and Urban Design)

Semester 2 (01-05)
- Graduation Project
- Internship
- Examination
- International Evaluation
TUTORS

Benito Juarez
President, FAB LAB Peru
Course: City Project: Things, Impact Analysis

Nadia Khort
General Manager, Shukhov Lab
Course: Readings on Urbanity

Paulina Smykovskaya
Legal Counsel, Avito
Course: Legal Regulations

Andrey Yelbaev
Project Leader, Strelka KB, Architect
Course: City Project: Things

Egor Kotov
Research Fellow, Centre for Advanced Data Analysis, HSE Graduate School of Urbanism
Course: Mapping Economy

Andrey Karmsatsky
CEO Urbica Design
Course: Urban Big Data

Alisa Barannikova
City Analyst, Tutor, Moscow Architecture School MARCH
Course: City Protocol

Andrei Ptitsyn
Deputy Director, Synesis
Course: New Business Models

Alexander Ostrogorsky
Tutor and Curator, Public Program, MARCH
Course: History of Urbanism

Vadim Smakhtin
CTO, Partner at Habidatum, Software Engineer
Course: Research Seminar Technology

Alexandra Zapolskaya
Tutor, HSE Graduate School of Urbanism
Course: Readings on Urbanity

Elena Mitrofanova
Leading Expert, Shukhov Lab, Architect
Course: City Project

Ivan Mitrofanov
Leading Expert, Shukhov Lab, Engineer
Course: Technology

Tutors

Guest Lecturers

Alexey Novikov
Habidatum
Oscar Aceves
Architecture, Professor
Jochen Schreer
Expert on Water Cycles, IAAC

Daniel Ibanez
Margen-Lab
Greg Lynn
UCLA School of the Arts and Architecture
Mitchell Joachim
New York University

Carlo Ratti
MIT Senseable City Lab
Bruno Moser
Foster + Partners
Christian Fröhlich
HSE School of Sociology

Victor Attila Albert
HSE School of Political Science
Thomas Ermacora
Fab Lab London
John Mitchin
Green Fab Lab Barcelona

Sofia Gavrilova
Photographer, Geographer, Curator
Course: Recording Sociology

Elena Mitrofanova
Leading Expert, Shukhov Lab, Architect
Course: City Project

Ivan Mitrofanov
Leading Expert, Shukhov Lab, Engineer
Course: Technology

HOW TO APPLY

Application link:


What documents do I have to submit?

1. Copy/scan of your valid passport
2. Certified copy of your Bachelor's and/or Master's degree
3. Certified copy of your Transcript of Records/list of grades
4. Resume/Curriculum vitae
5. Two letters of recommendation
6. Motivation letter

Admission requirements and portfolio items:

1. Properly recognized diploma or certificate + transcript
   - If you have not yet received your Bachelor's diploma, please include an official copy of your most recent academic transcript.
   - 0 - 20 points

2. Two letters of recommendation (in English)
   - A typical letter of recommendation should contain referee's: full name, position, workplace, academic degree, phone number, email.
   - 0 - 10 points

3. Resume / CV (in English)
   - Please, submit a standard CV, which should include, at a minimum, your educational achievements, work and research experience, publications (if any), and language skills.
   - 0 - 10 points

4. Motivation letter (in English)
   - This letter (1.5-3 pages) should describe your reasons for applying to this program, in the context of your long-term career goals and background.
   - 0 - 30 points

5. Interview (in English) with the program curator or/and program academic supervisor
   - Key criteria: erudition; critical literature review; spoken English; clarity of intent; interest in the topic; basic research and design skills.
   - 0-30 points

All document should be prepared in English.
www.hse.ru/en/ma/techcity

Shukhov Lab - HSE Laboratory for experimental urban design
Address: 20 Myasnitskaya ulitsa, Moscow 101000 Russia

Email: aatikhonova@hse.ru
Alexandra Tikhonova, program manager

Facebook: shukhovlab
WhatsApp: +7 (916) 087-0455
Instagram: shukhov_lab
VK: pfchse