

**Федеральное государственное образовательное учреждение высшего
профессионального образования
«Национальный исследовательский университет "Высшая школа экономики"»**

**Подразделение «Высшая школа урбанистики»
в сотрудничестве с Институтом Медиа, Архитектуры и Дизайна «Стрелка»**

**Направление подготовки
«Градостроительство»
Степень (квалификация): магистр**

**ПРОГРАММА
«ADVANCED URBAN DESIGN»
«ПЕРЕДОВЫЕ ПРАКТИКИ ГОРОДСКОГО ПРОЕКТИРОВАНИЯ»**

**Аннотация учебной дисциплины
«Spatial Planning, Analysis and Urban Design»
«Территориальное планирование и проектирование на основе исследования
пространственной структуры города»**

Шифр направления 07.04.04

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Spatial Planning, Analysis and Urban Design

Title of the Course: Spatial Planning, Analysis and Urban Design

Towards a working hypothesis for a contemporary urban praxis

Duration: 1st semester, first year; 1st semester, second year

Type: mandatory

Author/lecturer: Markus Schaefer, MArch, M.Sc. / SIA / REG A

Invited speakers (via skype): Stephen Graham, Parag Khanna, Kim Stanley Robinson

Scientific Advisors: Benoît Castelnérac (Department of Philosophy and Applied Ethics, University of Sherbrooke), Mathieu Marion (Professor, Department of Philosophy, Université du Québec à Montréal)

1. GENERAL DESCRIPTION

This course provides a basic conceptual framework by which to understand and engage with urban phenomena, It aims at establishing a working hypothesis for a contemporary praxis in urban design and planning.

It begins with the observation that cities are infrastructures for exchange that allow for a critical density of interactions (the exchange of symbols) and transactions (the exchange of goods). These are fuelled by social differentiation and division of work, and thereby give rise to urban cultures and markets. As there is no apparent limit to the human desire for exchange and differentiation, urban systems are inherently prone to growth and expansion. Institutions and practices such as governmental bodies, monetary systems or religious bodies support this expansion in many ways. Technologies such as transport and communication infrastructures of various sorts increase its growth, resulting in the volatile and fast paced planetary urbanism of today.

This origin allows us to understand cities on many scales and from different vantage points. We can develop a general idea of urban hardware (such as, for example, streets, squares, buildings, infrastructure, etc.) and software (such as institutions, laws, media, narratives, etc.), and test it against the history of cities, their main typologies, and their genealogy.

But to understand urban systems we also need to understand human beings: their cognition, their behavior and interactions, and their ability and need to act in large groups. Moreover, we need to look at ecological systems and scaling laws of which cities are a

unique case.

With this groundwork we are able to discuss what cities are for, what they provide us with, and how we should think about designing them. An understanding of the basic mechanisms of the urban allows us to contextualize trends, evaluate proposals, and spot problems – both small and large. We can examine and assess the changing role of a designer in the contemporary urban world, as well as discuss tools and techniques available today for a holistic practice which is based on systemically-based thinking about the city.

Methodology

Cities are agglomerations of people. They are a product of social interactions, shaping us while we shape them. They are as complex as society itself and, as such, elude complete control. Urbanism oscillates between top-down planning decrees and bottom-up organic growth, resulting in an uneasy mix—often charming, sometimes toxic—of the planned and the accidental. It is the aim of the course to make the student understand this inherent dichotomy when dealing with cities.

As urban designers and planners we go about our work very much like alchemists, with many preconceived notions: some dogmata, the occasional brilliant insight, but few hard facts. The course, therefore, transparently explains what is known and what is assumed, what the personal theory of the tutor is, and what a more widely shared agreement is. With such a flexible approach the students will be provided with the necessary sources and intellectual context to form an independent opinion.

This course is geared towards practitioners and aims at providing them with a robust and expandable conceptual basis for practical work. Importantly, it distinguishes between hard, falsifiable facts ('science') and collective or personal agenda ('design'). It also demonstrates dependencies and limits, as well as strategies and opportunities.

Formats

The lectures serve as a narrative backbone, and a reader and a 'mind-map' that contextualize the information and show directions to other fields of knowledge will accompany them. Students are required to read some texts in the reader before the lectures to have a general idea of the content to be covered beforehand.

The seminars establish a bridge between theoretical and practical knowledge. Each seminar revolves around a major theoretical topic that must be prepared by the students and presented in short lectures of five slides each. That said, the entry point into the discussion is not the theoretical but rather the everyday level. Based on the diverse personal and practical experience of the students, urban phenomena are shared, compared and understood in both their specific and generic aspects.

The assignment given in the first seminar session serves to catalyse these discussions and will be increasingly refined throughout the different thematic blocks and seminars: Students are required to identify an urban device, a combination of hardware (such as a

ticket machine for public transport), software (such as the schedule and fares of public transport) and the rituals, behaviors, relationships and opportunities it generates (such as personal advertisements as stickers on the cars). The device is a microcosm of an urban research and design project which can subsequently be extrapolated to different scales.

In the shop talks, the tutor and other practitioners (via Skype) review findings from the assignment and expand on them based on their personal practice in different scales and contexts.

The main goals of the course are to:

- Provide the students with a conceptual framework and mind map to navigate the fields of urban planning and design (“working hypothesis”)
- Enable the student to expand on this framework, venture into adjacent fields of knowledge and ask independent questions
- Explain the difference between urban studies, urban research, urban planning, and urban design
- Show the difference and the specific value between a scientific approach and a design approach to research
- Illustrate the bridge between urban phenomena in daily life and the urban as a general field of inquiry
- Give a sense of specific and generic manifestations of the urban
- Increase the awareness of the fundamental role cities have for humanity and assess it critically
- Build up a tool box of concepts and approaches for personal practical work

Multidisciplinary approach

Traditionally, urban design and planning courses focus on the history, the precepts and the tools of the discipline. This course, however, starts from first principles and builds up a conceptual framework that is compatible with various disciplines. It understands cities as an inherently multidisciplinary field of study and practice.

While the lectures are focused on principles, the seminars are based on phenomena, their analysis, categorization, and generalization. They allow students from different backgrounds to start from basic observations and build up a shared understanding that is, once again, inherently multidisciplinary.

The concept of the toolbox is based on the diverse work of the tutor that spans from urban research to urban design, architecture, media design, and narratives. Such a toolbox is not based on a particular discipline but rather on the diverse requirements of multidisciplinary projects. It respects the tool set of established disciplines but also acknowledges the need to combine, enrich and personally appropriate these sets to tackle projects that transcend individual disciplines. It grows with time and experience, and contains generic tools as well as highly customized inventions.

Connections to other courses and project modules of the Program

“Advanced Urban Design” is a ground-breaking program which provides a unique blend of courses with a truly multi-disciplinary breadth. This particular course aims at providing the basic conceptual framework that is compatible with this ambition. It supplies a mental map with which to contextualize other courses, and aims to clarify some fundamental concepts and introduce an operative link between theory and practice. The course is supported by a series of projects, ranging from “simulators” to week-long process-oriented assignments.

Specific Requirements

The course does not require prior knowledge or any specific skill. It is, however, expected that students are able to study, prepare presentations, communicate ideas and join discussions in English on a graduate student level. The multidisciplinary aim of the course also requires students to abstract from their former field of study and reason independently.

2. STRUCTURE AND THEMATIC COMPOSITION

Originality of the course

The course is based on personal research and practical work by the tutor and therefore does not follow any established line of thought or method. That said, it is based on an ongoing exchange with a wide network of professionals, academics and thinkers and owes insights to many individuals who will be duly credited during the coursework.

Thematic structure

Hours per theme:

#	<i>Theme</i>	<i>Total hours</i>	<i>Lectures</i>	<i>Seminars</i>	<i>Practical/Field trips</i>	<i>Individual Workload, hours</i>
1	Basics	38	6	6	3	23
2	Systems	38	6	6	3	23
3	Tools	38	6	6	3	23
<i>Total:</i>		114	18	18	9	69

Themes per week or visit:

(L: lecture, S: seminar, P: practical work)

Week 1 — Basics	L: Introduction / Urban History S: On Urban Phenomena L: Urban Exchange S: On Urban Research L: Urban Systems S: On Urban Science P: Design – contexts, questions, practices
Week 2 – Systems	L: Human beings S: On form, structure and infrastructure L: Systems ecology S: On territory L: Scaling S: On Patterns P: Design – research, concepts and communication
Week 3 – Tools	L: The transformative city S: On projects L: The productive city S: On innovations L: The political city S: On agenda P: Design – projects, tools and goals

3. COURSE CONTENT

Basics

This first block lays the groundwork for a systemic and systematic general understanding of cities and urban systems. Through a look at history, at scales, and the constituent mechanisms of urbanity—as well as the range of practices dealing with the urban—students should get a first sense and outline of the discipline. Cities are complex but approachable when the right questions are asked; they are open to personal observation, and even empathy.

Lecture 1.1 (2h)	<p>Introduction</p> <ul style="list-style-type: none"> • Urban studies, urban planning and urban design • Research in the natural sciences, social sciences and design <p>Urban history</p> <ul style="list-style-type: none"> • Why cities • The origin of cities • First ritual sites (Göbekli Tepe) • The special case of Catalhöyük • The Mesopotamian city (the „ur-city“) • Redistribution, governance • The economy of cities / import replacement • Chain of successive urban centers • Greek cities • Roman cities • Early Asian, American cities • Non-urban cultures • Medieval cities • Early modern cities • Industrialization • Globalization • The end of history and its return
Seminar 1.1 (2h)	<p>On urban phenomena</p> <ul style="list-style-type: none"> • Urban Age • Planetary urbanism • Planet of slums • World Systems Theory <p>Assignment 1: Observations and questions (see below)</p>
Lecture 1.2 (2h)	<p>Urban exchange</p> <ul style="list-style-type: none"> • Interaction, Transaction • Social differentiation, division of work • Cultures, markets • Synchronization, acceleration, virtualization • Globalisation, digitalization • Power, narrative, institutions
Seminar 1.2 (2h)	<p>On urban research</p> <ul style="list-style-type: none"> • Research in science and in design • Maps, charts, diagrams • Observation, documentation, communication • Analysis, concepts, theories

Lecture 1.3 (2h)	Urban systems <ul style="list-style-type: none"> • Infrastructure • Urban types (Kenworthy) • Functional urban areas • Splintering urbanism • Urban systems and global cities
Seminar 1.3 (2h)	On urban science <ul style="list-style-type: none"> • Scale, connectivity and hierarchy (Denis Pumain, Peter Taylor, Saskia Sassen, Manuel Castells) • Space, Time and infrastructure (Jeff Kenworthy) • Complexity, Networks and Simulations (Michael Batty)
Talking shop (3h – open end)	Design – contexts, questions and practices: <ul style="list-style-type: none"> • Discussion of assignment 1 • Contemporary practices, approaches and their background • Personal projects and case studies

Assignment – Step 1:

This first step is made by each student individually. The student should take a device from daily urban life, document it (photos, sketches), contextualize it (maps, diagrams, collages), question it (creative techniques such as extrapolation, transfer, analogy, etc.) and find room for adaptation or reinvention.

Devices can be “a kiosk”, “a vending machine”, “a bus-stop”, “a bench”, “a hotel lobby”, “a reception desk”, “an advertisement”, “a traffic sign”, “an elevator”, or “a metal detector”. They can be legal or illegal, formal or informal, based on coercion or desire, on rules or physical form. A choice of device should be clear and concrete enough that a student can do justice in the given time both to its real world presence as well as to its conceptual abstraction and contextualization.

The aim of the exercise is to make students go into the city, open their eyes, and switch on their minds. As a group we want to get a range of case studies, kindle individual preoccupations and profit from the heterogeneity of the student body. Starting from the device questions as to its users, the observer (the student), the urban context—even our culture as a whole—can be extrapolated. The device is a microcosm of urbanity and its manifold relations and rules. At the end of this first phase, we will catalogue the devices according to different criteria and organize the students into groups based on shared preoccupations and ideas.

All research and development will be done in postcard format so that the result will be formally coherent.

Theme Bibliography:

Core sources

Braudel, Fernand. *The Perspective of the World*. London: Collins, 1985.

Chew, Sing C.: *World Ecological Degradation: Accumulation, Urbanization, and Deforestation 3000 B.C. – A.D. 2000*. Lanham, MD: Rowman & Littlefield, 2001.

Chew, Sing C.: *The Recurring Dark Ages: Ecological Stress, Climate Changes, and System Transformation*. Lanham, MD: AltaMira Press, 2006.

Diamond, Jared M. *Guns, Germs, and Steel: The Fates of Human Societies*. New York: W.W. Norton, 1998.

Jacobs, Jane: *The Economy of Cities*, New York: Random House, 1969

Mumford, Lewis: *The City in History: Its Origins, Its Transformations, and Its Prospects*. Harvest Books, 1968.

Sassen, Saskia: *The Global City: New York, London, Tokyo*. Princeton: Princeton Press, 2001.

Additional sources

Diamond, Jared M. *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking, 2005.

Ferguson, Niall. *Civilization: The West and the Rest*. New York: Penguin, 2011.

Ferguson, Niall. *The Ascent of Money: A Financial History of the World*. New York: Penguin, 2008.

Graeber, David. *Debt: The First 5000 Years*. New York: Melville, 2011.

Pumain, Denise and Saint-Julien, Thérèse (eds.): *Cities in Movement: Urban Systems on the Eve of the 21st Century*. Leuven: Geographisch Instituut Katholieke Universiteit Leuven, 1991.

Hall, Peter. *Cities in Civilization*. New York: Pantheon, 1998.

Jacobs, Jane: *The Death and Life of Great American Cities*. New York: Vintage Books, 1961.

Jacobs, Jane: *Cities and the Wealth of Nations*. New York: Random House, 1984.

Van de Mieroop, Marc: *The Ancient Mesopotamian City*. Clarendon Press, 1997.

3.2. Systems

Understanding cities requires understanding human beings, and this second block explores agents, scales and the patterns consequently generated. In the emerging science

of complex systems, phenomena are no longer based on linear cause and effect, but rather on correlations and probabilities. Students should understand that questions cannot be isolated from their contexts, that behind every answer there is another question. But they should also become comfortable in systemic thinking – that answers can be found when the right connections are made.

Lecture 2.1 (2h)	Human beings <ul style="list-style-type: none"> • Cognition and body • Group behavior • Sociology
Seminar 2.1 (2h)	On form, structure and infrastructure <ul style="list-style-type: none"> • The role of form • Space Syntax • One hour city • Form follows infrastructure • Pattern language Assignment 2: Design research projects (see below)
Lecture 2.2 (2h)	System ecology <ul style="list-style-type: none"> • Sustainability • Panarchy • Resilience
Seminar 2.2 (2h)	On territory <ul style="list-style-type: none"> • Human geography • Standortmosaik
Lecture 2.3 (2h)	Scaling <ul style="list-style-type: none"> • Complex system science • Scaling laws in biology • Scaling laws in cities
Seminar 2.3 (2h)	On patterns <ul style="list-style-type: none"> • Big Data • Data patterns
Talking shop (3h – open end)	Design – research, concepts and communication: <ul style="list-style-type: none"> • Discussion of assignment 2 • Contemporary research projects, their questions and intentions • Personal projects and case studies

Assignment – Step 2

Based on the insights from Step One, students will formulate a research project in small groups with an initial observation, a hypothesis, a research strategy, a test, and a general conclusion. They will take the most promising urban device, research its agents and social

context (portraits), its function (diagram) and its spatial context (map). Based on the research they prepare, the third step which will consist of proposing, building, and testing a new urban device.

Theme Bibliography:

Core sources

Batty, Michael: *The New Science of Cities*. Cambridge: MIT Press, 2013.

Bettencourt, Luis and West, Geoffrey: "A Unified Theory of Urban Living." *Nature* 465 (2010): 912-913

Hariri, Yuval: *Sapiens: A Brief History of Humankind*. London: Harper, 2015.

Holling, Crawford S: *Panarchy: understanding transformations in human and natural systems*. Edited with L. Gunderson, (editors) Washington, DC: Island Press, 2002.

Lefebvre, Henri. *The Production of Space*. Oxford, OX, UK: Blackwell, 1991.

Portugali, Juval. *Complexity, Cognition and the City*. Heidelberg: Springer-Verlag Berlin Heidelberg, 2011.

Soja, Edward W.: *Postmodern Geographies: The Reassertion of Space in Critical Theory*. London: Verso, 2011

Wallerstein, Immanuel: *World Systems Analysis: An Introduction*. Durham: Duke University Press, 2004.

Additional sources:

Albeverio, S., Andrey, D., Giordano, P., Vancheri, A. (Eds.): *The Dynamics of Complex Urban Systems: An Interdisciplinary Approach*. Heidelberg: Physica-Verlag, 2008.

Hillier, Bill. *Space Is the Machine: A Configurational Theory of Architecture*. Cambridge: Cambridge UP, 1996.

Pentland, Alex: *Social Physics: How Good Ideas Spread-The Lessons from a New Science*. New York: Penguin, 2014.

Priester, Roland, Kenworthy, Jeffrey and Wulfhorst Gebhard: "The Diversity of Megacities Worldwide: Challenges for the Future of Mobility." In: Institute for Mobility Research (ifmo): *Megacity Mobility Culture: How Cities Move on in a Diverse World*. Heidelberg: Springer-Verlag Berlin Heidelberg, 2013.

Tools

This third block focuses on how and why we work on cities. It will make the students understand the range of tools and questions they are confronted with as urbanists. The lectures will be made more accessible by personal projects and the research of the tutor.

Lecture 3.2 (2h)	The transformative city <ul style="list-style-type: none"> • Technology • Mobility • Energy, water, food • Growth and shrinkage • Legacy, stocks and transformation
Seminar 3.2 (2h)	On projects <ul style="list-style-type: none"> • Narratives • Scenarios • Scripts • Plans • Projects Assignment 3: Project (see below)
Lecture 3.1 (2h)	The productive city <ul style="list-style-type: none"> • Urban industry • Digitalization • Internet of things (IOT) • Automation • Smart Cities and their pitfalls
Seminar 3.1 (2h)	On innovation <ul style="list-style-type: none"> • Knowledge economy • What is innovation • Urban innovation districts
Lecture 3.3 (2h)	The political city <ul style="list-style-type: none"> • Governance • New geographies • Institutions • Integrated markets – fragmenting regions and nations • The emergence of City states • Power and redistribution • Urban warfare • Security
Seminar 3.3 (2h)	On agenda <ul style="list-style-type: none"> • Urban agendas • Participation

Talking shop (3h – open end)	Design – projects, tools and goals: <ul style="list-style-type: none"> • Discussion of Assignment 3 • Questions asked by clients, collaborators and governments • Personal projects and case studies
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Assignment – step 3:

Based on Steps 1 and 2 the student groups will develop an urban device that performs in the city, makes people interact, and generates situations that the groups consider meaningful. The groups should test the device, show the ensuing interactions, and ultimately assess its effectiveness and elegance.

Ideas could be a “dating bench”, a “transportable pedestrian crossing” (cf. Lucius Burckhardt), a “postal box roulette”, an advertising campaign on ticket stubs, or an “elevator gallery”. The devices can be physically realised, mocked-up, or tested for validity by other means. Nevertheless, it is important that the students experience the imperfection, frustration, potential embarrassment, but also serendipity and unexpected beauty of dealing with real things in the real world.

All documentation will happen in postcard format resulting in a stack of postcards that can be produced and distributed to all students as a final result.

Theme Bibliography:

Core sources

Davis, Mike: *Planet of Slums*. New York: Verso Books, 2007.

Graham, Stephen and Marvin, Simon: *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London: Routledge, 2001

Mishra, Pankaj. *From the Ruins of Empire: The Revolt against the West and the Remaking of Asia*. New York: Picador, Farrar, Straus and Giroux, 2012.

Soto, Hernando De. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic, 2000.

Additional sources

Baccini, Peter and Brunner, Paul H.: *Metabolism of the Anthroposphere*. Berlin: Springer, 1991

Brenner, Neil. *New State Spaces: Urban Governance and the Rescaling of Statehood*. Oxford: Oxford UP, 2004.

Kaplan, Robert D. *The Revenge of Geography: What the Map Tells Us about Coming Conflicts and the Battle against Fate*. New York: Random House, 2012.

4. GRADING

Explanation of the grading system

Grading is based on four elements:

- Attendance
- Seminar presentation
- Assignment
- Final exam (overall mental map of the course and an individually chosen area of detail)

The evaluation criteria are:

- Attendance: presence and participation in class
- Seminar presentation: content, visual presentation, oral presentation
- Assignment: content, originality, visual presentation, group work
- Final exam: comprehensiveness, detail and individuality (i.e. is the student able to define an individual area of interest in the overall context of the course)

Each grade is attributed according to 10-point scale and then is weighted according to the following percentage:

Attendance — 20%

Seminar presentation — 30%

Assignment — 30%

Final exam — 20%