



MSc MADE

Metropolitan Innovators | YMS-30306

Course guide **November 2021**
6 ECTS

 **WAGENINGEN**
UNIVERSITY & RESEARCH

**AMS**
AMSTERDAM INSTITUTE FOR
ADVANCED METROPOLITAN SOLUTIONS

 **TU Delft**

“The only questions that really matter are the ones you ask yourself.”

- Ursula leGuin

Colophon

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Responsible chair groups: Cultural Geography (WUR) & Urbanism (TUD).

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Course Introduction and Motivation

1.1 Profile of the course

Contemporary metropolitan regions face a variety of complex challenges that concern large numbers of stakeholders with often competing claims, originating from different world views. Metropolitan regions like the Amsterdam Metropolitan Area (AMA) are grappling with the challenge how to manage transitions towards sustainability that are simultaneously effective, inclusive and fair, while facing high costs to break free from path dependency lock-ins. This transition towards sustainability may seem like a relatively new aim, but is something the Dutch government has been pursuing since its first Environmental Action Plan (1989), which focused on closing production and consumption loops, preventing degradation and exhaustion of resources and harmful emissions. The plan also emphasized the responsibility of different groups in society (public, private, and civic), to meet environmental targets. The envisioned transition is characterised

by a systems-change, which means that whole chains of production, consumption and behaviour must change comprehensively, thus involving a large number of stakeholders with a multitude of worldviews and competing claims over those systems. On top of this, successive shocks have demonstrated that the burdens and benefits of transitions are ill distributed, with disproportionate negative impacts on vulnerable groups, people of colour, the poor and people with a migration background. This course enables Metropolitan Innovators to identify and evaluate these claims from **three main perspectives: socio-technical, (eco)systems and spatial justice**. The course thereby offers the theoretical and conceptual tools to analyse and discuss metropolitan challenges and the possible implications of proposed solutions.

When we are seeking to innovate to attain the desired technological and societal transition, a number of questions arise that are both theoretical

Image 1
In orange the courses
with overlapping
themes in the 1st
and 2nd year of MSc
MADE.

Metropolitan Challenges 12 EC	Metropol. Innovators 6 EC	Data 2 3 EC	Selected Electives at WUR/TUD 18 EC	Metropolitan Solutions 12 EC
Data 1 3 EC	Entrepr. Thinking 3 EC	Entrepr. Skills 3 EC		
Living Lab 24 EC collaborate in transdisciplinary team to co-create metropolitan solutions in the Amsterdam Living Lab		Prof Profile 6 EC	Thesis 30 EC building a theoretical framework, advancing analytical methods, and explicating conceptual approaches	

and at the same time deeply practical: How do we optimize environmental impacts when promoting systems transitions? How do we understand knowledge in processes of transformation, where transdisciplinarity is necessary? How can we understand the ways technological solutions relate to political questions of justice and democracy? These questions become particularly urgent in view of new approaches developed to promote innovation: using big data, developing smart cities, where experimentation occurs in living labs and space is created for entrepreneurial interventions. How do we face the ethical, political, cultural, economic and environmental challenges related to these processes?

1.2 Motivation of the course

The management of systems in transition to sustainability has several dimensions: cultural, political, technical and aesthetic, to cite but a few. This is because we assume sustainability can only happen when its three crucial dimensions (social, economic and environmental) happen simultaneously (Larsen, 2012). Hence, this transition cannot be addressed by planners, engineers and designers alone, as they require engagement with a multiplicity of actors holding different perspectives necessary to understand and tackle all the dimensions involved. The various disciplines that contribute to AMS and the MADE program bring particular approaches to innovations towards sustainability: from engineering to entrepreneurship, from urban design to human geography and data sciences, from environmental sciences to sociology of

innovation. Combining these into interdisciplinary and transdisciplinary ways of working is required to deal with complex systems involved in urban development and innovation. For any actor working to contribute to advanced metropolitan solutions towards sustainability it becomes crucial to be able to translate metropolitan challenges into researchable questions and to be able to understand, communicate and cooperate with other actors in order to integrate their knowledge about issues at hand and to understand different (and often conflicting) objectives. Awareness of the socio-economic context, as well as the implicit and explicit values and cultural norms operating in a specific place are essential to achieve suitable solutions.

This course enables students to use, contrast, discuss and integrate those various approaches to engage with metropolitan innovations and potential solutions in a meaningful way, starting from three main perspectives: socio-technical, ecosystems and spatial justice. These perspectives contain different normative and theoretical dimensions that trigger different questions for metropolitan innovators. These different questions require the use of different methods of research. These perspectives, their questions and methods are explored in the course.

Socio technical: in this perspective, students understand metropolitan innovation and transition towards sustainability from the point of view of debates on the relations between technology and society, as well as competing ideas on the role of science and knowledge for socio-technical innovation.

(Eco)systems: in this perspective, students understand metropolitan innovation and transition towards sustainability from an ecosystems perspective. Framing urban areas as systems makes it possible to model urban areas and distinguish the different subsystems from which they are made.

Spatial Justice: in this perspective, students understand metropolitan innovation and transition towards sustainability from a political point of view, in which the governance and the social sustainability of systems is highlighted. This allows students to reflect and situate their actions within ideas of democracy and participation, for instance, and to ponder on how to distribute the burdens and benefits of solutions. All three perspectives examine the ethical dimensions of their own assumptions and frameworks, and encourage students to consider, evaluate and discuss these ethical and political dimensions.

1.3 Overlapping themes

This course complements and supports the Metropolitan Challenges Course, which is given in the first quarter of the programme, and provides a theoretical basis for the Metropolitan Solutions Course, given later. We introduce and discuss tools and theoretical frameworks for unravelling complex metropolitan challenges and present approaches from different areas of knowledge dealing with metropolitan innovation challenges. These areas of knowledge are primarily design (broadly conceived), planning, engineering and urban studies. In short, those are disciplines that deal with the three main objects of a metropolitan innovator: space, society and technology. It does so by promoting a discussion on metropolitan transition to sustainability and the theoretical and practical frameworks and tools being used by different disciplines via interactive lectures and student workshops evaluating and acting upon the issues being treated in the Metropolitan Challenges Course.



1.4 Assumed prerequisite knowledge

Relevant bachelor in a (socio)-technical discipline related to the built environment. Basic knowledge and skills in design and research methods. Notions of different scientific research paradigms and associated methods. Students in this course are assumed to have followed the MADE course “Metropolitan Challenges”.

1.5 Learning outcomes

At the end of this course, students will be able to:

1. Describe different logics of enquiry and the suitability of methods derived from them. Logics of enquiry pertaining to the natural sciences (including environmental sciences), applied sciences (engineering), the social sciences and design activities [Skills covered: literature research, critical thinking, research design]
2. Describe and interpret a variety of knowledge claims in three main areas proposed (sociotechnical/ eco-systemic / spatial justice). By ‘knowledge claims’ we mean the connection between research questions, methods employed, expected outcome and deliverables according to different research traditions. [Skills: research design, literature research, critical thinking]
3. Explain the merits of various modes of organizing, governing and discussing metropolitan innovation: living labs, transition towns, system innovations. [Skills: groups dynamics, communication and collaboration skills]

4. Identify and critically discuss the implicit values of particular interventions in relation to the three frameworks presented, including what interests are at stake, what stakeholders are involved, what subjects are produced, groups configured, experiences generated and scripted behaviour promoted [Skills: mapping, story-telling, visioning, planning, sketching, communicating graphically and orally]

5. Identify and discuss strategies for transition towards sustainability from an ecosystems point of view, including the understanding of metropolitan systems in interaction with one another

6. Explain the distribution of burdens and benefits of metropolitan solutions, and to use spatial justice as a framework for decision making, including its implications for the governance of metropolitan systems and the management of these systems towards sustainability, including notions of governance, citizenship, participation and democracy.

7. Make explicit the values that support decisions and to reflect on ethical matters and professional roles connected to the research and design activities. In doing so, students must be able to reflect on and discuss how different worldviews impact problem identification, knowledge formation and design interventions [Skills: writing, sketching, drawing, story-telling, critical thinking]



Course description

2.1 Educational activities

We convene in 8 sessions for lectures, guest lectures, group discussions and a range of exercises to critically and creatively engage with the three approaches in the course.

Students will be asked to select a particular metropolitan issue / site to engage with, in which a particular socio-technical system can be identified. Students will develop short evaluations of each issue using the frameworks presented: socio-technical, ecosystems and spatial justice. Each framework includes a theoretical dimension and an applied dimension, in which evaluation methods are presented. For each framework, students will be asked to discuss the theory in class, using literature and other materials provided to them, and to evaluate the solutions to the challenges they encountered from a different perspective, using the specific frameworks/ tools presented. In intermediate assignments, students are asked to prepare a brief critical engagement with the literature and subsequently to respond to those of each other.

Before and after classes, and in two final sessions towards the end of the course, students are mentored in their essay writing.

2.2 Course materials and resources

The texts and papers used in this course are available from TU Delft and WUR libraries or from the hyperlinks provided. Students must be on campus or logged in via VPN to access papers.



Assessment

The final assignment consists of a **2500 (+/- 10%) word essay written individually**. In this, the students build on the exercises made previously during the course, in order to compare the three frameworks, using theories (referring to the literature of the course) and the tools and methodologies they used previously, to elaborate a critique and a reflection of the chosen Metropolitan Challenge. This critique and reflection need to engage both with the analysis and the possible solutions to the selected challenge, as well as with the three frameworks themselves. The rubric for evaluation of the essay is provided separately to students.

10% of the grade is given for intermediate assignments. As a precondition to receive a grade, students must do at least 5 out of 7 assignments and peer assignments.



Course schedule

The course will be lectured in 10 sessions, from THURSDAY November 11 until MONDAY December 11, from 11:00 to 16h30.

Presence is mandatory for completion of the course.

Overview of sessions and dates

1. Introduction	THU 11-Nov
2. Sociotechnical	MON 15-Nov
3. Spatial Justice	THU 18-Nov
4. Ecosystems	MON 22-Nov
5. Sociotechnical 2	THU 25-Nov
6. Spatial Justice 2	MON 29-Nov
7. Ecosystems 2	THU 2 DEC
8. Ethics Debate	MON 6 DEC
9. Essay Clinic	THU 9 DEC
10. Essay Clinic	MON 13 DEC

Full schedule on the following pages

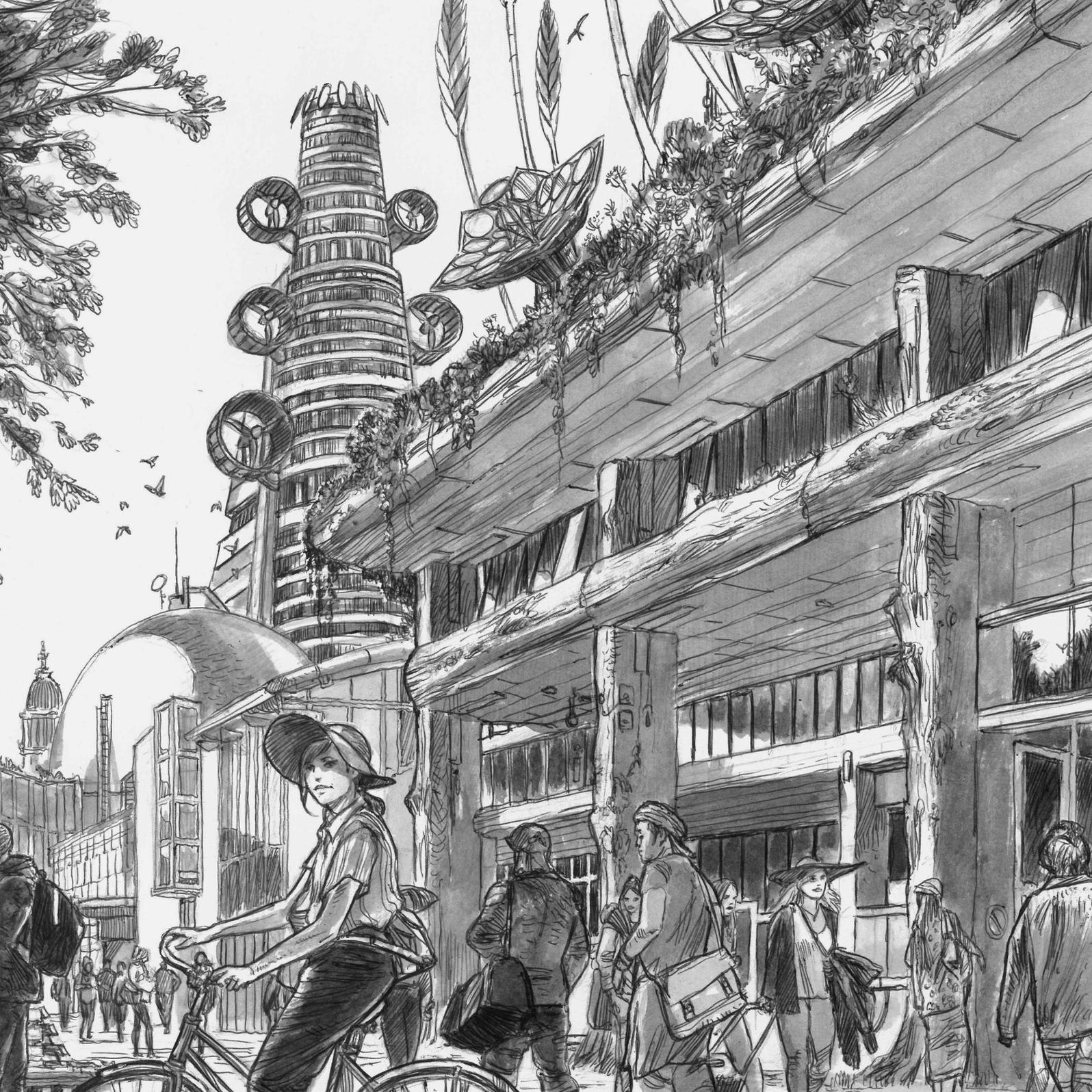
Session	Date	Place	Perspective	Responsible	Summary	Active Exercise	Literature	Learning Outcomes
S1	Thu 11 Nov	Amsterdam Zuid-Oost (Bijlmer) Imagine IC	INTRO	RR/CD	INTRO to the course: we will focus on 3 innovative perspectives on urban development Short intro intercultural attitudes to metropolitan problems: multiculturalism/ migration/cultural shifts	Observation/ synthesis/ graphic communication/ + The Bijlmer as a 'failure of high modernism'? compare multiple explanations	<ul style="list-style-type: none"> • Scott, James C. (1998) Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed: chapter 2 and 3 • Olsson & Loerakker: Revisioning Bijlmermeer https://failedarchitecture.com/the-storybehind-the-failure-revisioning-amsterdam-bijlmermeer/ <p>Extra reading:</p> <ul style="list-style-type: none"> • Markard, J., Raven, R., & Truffer, b. (2012). Sustainability transitions: An emerging field of research and its prospects. Research Policy, 41, 955-967. 	L3
S2	Mon 15 Nov	AMS	SOCIOTECH	CD	Socio-technical perspective 1: the politics of artefacts and actor-network theory. And the question how we are to manage transitions to sustainability	<p>An exercise on socio-technical analysis using Actor Network Theory and its critics: why do some socio-technical projects fail?</p> <p>And a theatrical 'Silicon Valley exercise', exploring a modest proposal for disrupting the city: towards total mobilization.</p>	<ul style="list-style-type: none"> • Geels, Frank (2005) The dynamics of transitions in socio-technical systems: A multilevel analysis of the transition pathway from horse-drawn carriages to automobiles (1860 –1930), Technology Analysis & Strategic Management, 17:4, 445-476 http://www.tandfonline.com/doi/abs/10.1080/09537320500357319 • • Latour, Bruno (1996) Aramis, or the Love of Technology. Cambridge, MA: Harvard Univ. Pres: Ch7 Aramis is Ready to Go (Away); Epilogue: Aramis Unloved. <p>Extra reading:</p> <ul style="list-style-type: none"> • Brand, Ralf (2005) 'Urban infrastructures and sustainable social practices', Journal of Urban Technology, 12:2, 1 – 25 http://www.tandfonline.com/doi/full/10.1080/10630730500307128 • Escobar, Arturo (2018). Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds. Duke University Press, Chapter 1: Design for the real world 	L3, L4

Session	Date	Place	Perspective	Responsible	Summary	Active Exercise	Literature	Learning Outcomes
S3	Thu 18 Nov	AMS	SPATIAL JUSTICE	RR	This lecture introduces students to debates over the “tragedy of the commons” in order to clarify principles of spatial justice. It connects spatial justice with sustainability studies through the dimension of social sustainability, explored in this session through the concepts of governance, polycentric governance, multi-level governance, devolution, communicative rationality and communicative planning. The session concludes with a lecture about “opportunities offered by conflicts in planning”, by UvA’s Nanke Verloo.	Make a short movie (2 to 3 minutes) in examples of urban justice and injustice in Amsterdam: upload to website/	<ul style="list-style-type: none"> •HARDIN, G. (1968). The Tragedy of the Commons. <i>Science</i>, 162(3859), 1243-1248. •DIETZ, T., et al. (2003). "The Struggle to Govern the Commons." <i>Science</i> 302(5652): 1907-1912. •LARSEN, G. L. (2012). <i>An Inquiry into the Theoretical Basis of Sustainability. Understanding the Social Dimension of Sustainability.</i> J. Dillard, V. Dujon and M. C. King. London, Routledge. 	L6, L7
S4	Mon 22 Nov	AMS	ECOSYS	AE	Ecosystems Approach: Theory: Systems thinking: STS and ecosystem approaches/ PLUS: Pitch on topics chosen by students to develop analysis	The texts present and discuss various figures with ecosystem approaches. What are the similarities and differences?/ PLUS: Pitch on topics chosen by students to develop analysis	<p>Essential reading:</p> <ul style="list-style-type: none"> •Yigitcanlar, T., Dizdaroglu, D. (2015). Ecological approaches in planning for sustainable cities: A review of the literature. <i>Global Journal of Environmental Science and Management</i>, 1(2), 159-188. doi: 10.7508/gjesm.2015.02.008 •Van Bueren, E., van Bohemen, H., Itard, L., Visscher, H., (2012). <i>An Ecosystems Approach.</i> Dordrecht: Springer, 2012, Chapter 1 (Introduction) & Chapter 2 (Ecosystems Thinking: Ecological Principles for Buildings, Roads, and Industrial and Urban Areas), Ch. 11 (Environmental Strategies and Tools for Integrated Design) •Grimm, N.B., Grove Grove, J., Pickett, S.T.A., Redman, Ch.L. (2000). Integrated Approaches to Long-Term Studies of Urban Ecological Systems: Urban ecological systems present multiple challenges to ecologists—pervasive human impact and extreme heterogeneity of cities, and the need to integrate social and ecological approaches, concepts, and theory. <i>BioScience</i>, (50)7: 571–584, https://doi.org/10.1641/0006-3568(2000)050[0571: ATLTO]2.0.CO;2 <p>Extra reading:</p> <ul style="list-style-type: none"> •Heynen, N. (2014). Urban Political Ecology I: The urban century. <i>Progress in Human Geography</i>, 38(4) 598–604. •Angelo, H. and Wachsmuth, D. (2015), Urbanizing Urban Political Ecology: A Critique of Methodological Cityism. <i>Int J Urban Regional</i>, 39: 16–27. doi:10.1111/1468-2427.12105 	1.5

Session	Date	Place	Perspective	Respon- sible	Summary	Active Exercise	Literature	Learning Outcomes
S5	Thu 25 Nov	AMS	SOCIOTECH	CD	Socio-technical perspective 2: knowledge and the making of subjects	Observation/ synthesis/ graphic communication/ + The Bijlmer as a 'failure of high modernism'? compare multiple explanations	<p>Essential reading:</p> <ul style="list-style-type: none"> •Calzada, Igor, and Cristobal Cobo. 2015. "Unplugging: Deconstructing the Smart City." <i>Journal of Urban Technology</i> 22 (1): 23–43. https://doi.org/10.1080/10630732.2014.971535. •Foucault, M. 1977. "Discipline and Punish, Panopticism." In <i>Discipline & Punish: The Birth of the Prison</i>, edited by Alan Sheridan, 195-228. New York: Vintage Books. https://foucault.info/documents/foucault.disciplineAndPunish.panOpticism/ •Scott, James C. (1998) <i>Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed</i>: chapter 10. <p>Extra reading:</p> <ul style="list-style-type: none"> •Klein, Julie (2015). "Discourses of transdisciplinarity: Looking back to the future", <i>Futures</i>: 65, 10–16. http://www.sciencedirect.com/science/article/pii/S001632871500004X 	L3, L4
S6	Mon 29 Nov	AMS	SPATIAL JUSTICE	RR	This session delves into the meaning of communicative rationality for planning and introduces students to the notion of communicative planning. It explores the notion of value proposition in planning and introduces students to values in liberal democracies, the notion of governance X government, public goods and the notion of social function of property and its implications for planning of the built environment.	Guest lecturer: Nanke Verloo (UvA).The Great Planning Game (game about the role of planners and designers)/ Values exploration through , mind mapping/ Stakeholder analysis in your project (graphic analysis)/ Social sustainability index score/ Values mapping	<ul style="list-style-type: none"> • Healey, P. (1996). "The communicative turn in planning theory and its implications for spatial strategy formation." <i>Environment and Planning B: Planning and Design</i> 23: 217-234. •Forester, J. (1999). <i>The deliberative practitioner: encouraging participatory planning processes</i>. Cambridge, Mass., MIT Press. / Fischer, F. and J. Forester (1993). <i>The Argumentative turn in policy analysis and planning</i>. Durham, N.C., Duke University Press. 	L6, L7

Session	Date	Place	Perspective	Responsible	Summary	Active Exercise	Literature	Learning Outcomes
S7	Thu 2 Dec	AMS	ECOSYS	CD	Ecosystems approach: Applied: Design and management of systems integration	<p>Morning: lecture and team exercise on redesigning Vondelpark, with Arjen van Nieuwenhuijzen (Witteveen+Bos / AMS)</p> <p>Afternoon: debating impacts of innovation on climate and biodiversity at different scales</p>	<p>Essential reading:</p> <ul style="list-style-type: none"> •Davoudi, S., Sturzaker, J. (2017). Urban form, policy packaging and sustainable urban metabolism. <i>Resources, Conservation and Recycling</i>, 120: 55-64. (mandatory) •Lawhon, M., & Murphy, J. T. Socio-technical regimes and sustainability transitions: Insights from political ecology. <i>Progress in Human Geography</i>, 36(3), 354-378. •Pesch, U., Vernay, A.L., van Bueren, E., Pandis Iverot, S. (2017). Niche entrepreneurs in urban systems integration: On the role of individuals in niche formation. <i>Environment and Planning A</i>, 49(8): 1922-1942. <p>Extra reading:</p> <ul style="list-style-type: none"> •Klindworth K., Djurasovic A., Knieling J., Säwert K. (2017). From Linear to Circular—Challenges for Changing Urban Metabolism?! An Analysis of Local Energy Transition Activities in Four European Cities. In: Deppisch S. (eds) <i>Urban Regions Now & Tomorrow. Studien zur Resilienzforschung</i>. Springer, Wiesbaden •Voytenko, Y., McCormick, K., Evans, J., & Schliwa, G. (2016). <i>Urban living labs for sustainability and low carbon cities</i> 	L5
S8	Mon 6 Dec	AMS	ETHICS DEBATE	CD + RR	<ul style="list-style-type: none"> • Data issues debate with data course • Pecha Kucha presentations on essay drafts 		<ul style="list-style-type: none"> •Townsend, Anthony (2013) <i>Smart Cities: Big data, Civic Hackers, and the Quest for a New Utopia</i>. New York: W.W. Norton & Co. , Ch2: cybernetics redux, pp.57-92 •Kitchin, Rob (2014) <i>Big Data, new epistemologies and paradigm shifts</i>, <i>Big Data & Society</i>, April–June: 1–12 •Kitchin, Rob (2016) <i>Reframing, and remaking smart cities. Programmable City Working Paper 20</i>, https://osf.io/cyjhg/ •Lemov, Rebecca. 2016).. 'Big data is people'. <i>Aeon</i>. June 16. Available: https://aeon.co/essays/why-big-data-is-actually-small-personal-and-very-human 	L6, L7

Session	Date	Place	Perspective	Responsible	Summary
S9	Thu 09 Dec	AMS	ESSAY CLINIC	RR, CD, AE	During this session, Clemens and Roberto will give individual feedback on the topics chosen by students for the analysis.
S10	Mon 13 Dec	AMS	ESSAY CLINIC	RR, CD, AE	During this session, Clemens and Roberto will give individual feedback on the topics chosen by students for the analysis



Course Details

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Guest lecturers:

Dr. Nanke Verloo (UvA)
Dr. ir. Arjen van Nieuwenhuijzen

When emailing, please start the subject line with 'MADE'

Community

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