Course syllabus

Smart City Governance: AI Ethics in a Spatial Context Den smarta stadens styrning: AI och etik i en spatial kontext

VFTN75, 7.5 credits, A (Second Cycle)

Valid for: 2026/27
Faculty: Faculty of Engineering LTH
Decided by: PLED L
Date of Decision: 2026-02-20
Effective: 2026-05-18

General Information

Depth of study relative to the degree requirements: Second cycle, in-depth level of the course cannot be classified
Elective for: A5, C5-pvs, D5-mai, L4-fr, L4-gi
Language of instruction: The course will be given in English

Aim

Artificial intelligence (AI) is increasingly being used to change our cities and manage traffic and movement, meet the needs of commerce, combat crime, monitor individuals and improve our everyday lives. At the same time, legal, democratic and ethical interests need to be balanced against technical needs for optimization. How may individuals' privacy and rights to codetermination be balanced against development and employment of digital technologies and AI, dependent on large quantities of data? What are the main legal frameworks and what ethical guidelines should be adhered to? What degree of explainability and transparency is reasonable towards citizens, and in what ways do expectations and perceived benefits differ in different parts of the world?

In line with the need for responsible design and ethical reflection on digitalisation, this course aims to give an understanding of the

role of datafication, automation, platformisation and artificial intelligence (AI) in an urban and spatial context. By looking at concrete national and international cases of development and control of so-called smart cities, including applications such as facial recognition in public environments or how "the city as a platform" has had an impact in urban planning, knowledge can be gained about what interests need to be balanced and what level of governance is reasonable for managing the digital technologies in an urban context.

The course will thus, in a general sense, provide insights into the importance of digitalisation and the societal significance of new technologies with a focus on legal and ethical challenges in an urban and spatial context. It includes phenomena such as: data capture and collection of large individual-based data sets, the growth and importance of digital platforms, the use of automated decision-making in the public sector, and autonomous and self-learning technologies in the AI field - and the forces operating therein between private and international as well as public and national actors. The course is thus intended to give the students an in-depth knowledge of the consequences of how technology is applied in, and interacts with, society - with a focus on smart cities, governance and ethics.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- be able to explain theoretical frameworks on smart cities, urban platforms and urban AI
- master basic English terminology in critical social science research on smart cities, datafication, and artificial intelligence
- demonstrate a basic understanding of digital and data-driven business models and their significance for technology development and deployment in the public and private sector
- demonstrate a basic understanding of the important legal and policy considerations in urban data collection and the use of AI in a spatial context

Competences and skills
For a passing grade the student must

- be able to describe the basic content and importance of relevant European and international laws for a spatial context
- be able to describe key benefits, but also conflict areas that a development towards smart cities brings
- understand, analyze and describe potential challenges in the light of ethical and legal governance of smart cities in the European context
- be able to present their project work (thesis) both in writing, orally, and as opponents to another thesis.

Judgement and approach
For a passing grade the student must

- demonstrate a critical, independent and multidisciplinary approach to data collection and automation in urban environments.
- be able to identify the different stakeholders and interests involved in smart city development and governance, with a particular focus on legal and ethical approaches.

Contents

The course is designed as a lecture and seminar series, as well as independent written work in a smaller group based on concrete development projects / cases where datafication, automatisation and AI affect special planning. The course offers guest lectures from multidisciplinary as well as practical fields, where eg. city representatives present their work and their challenges with digitization and the use of autonomous and self-learning technologies.

The following steps are addressed:

- The uses of data-dependent AI-technologies, and what the technology application to urban environments and organisations looks like
- The basics of trustworthy artificial intelligence, e.g. transparency, fairness, accountability, and explainability
- Digital platforms and platformisation: what does a data-driven organizational form mean in general, and for a spatial context in particular?
- The basics of legal frameworks relevant for smart city development, regulation and governance, particularly in the European context
- International, European and national examples of smart city projects, are presented and problematised.

Examination details

Grading scale: UG - (U, G) - (Fail, Pass)
Assessment:

Participation in the course seminars is compulsory (although a maximum of two exercises may be completed by make-up assignments). Understanding of the lecture material and course readings may be examined orally. The main assessment is a written essay and group presentation. At the final presentation, students are expected to oppose and critically assess another essay / presentation.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Modules
Code: 0120. **Name:** Smart City Governance.
Credits: 7.5. **Grading scale:** UG - (U, G).

Admission

Admission requirements:

- ASBF05 The Fundamentals of Urban Design **or** ASBF10 Sustainable Urban Design **or** ETSF25 The Business of Software **or** FMIF45 Sustainability and Resource Use with Perspectives on Information and Communication Technology **or** VFTF10 Real Property Formation

The number of participants is limited to: 28
Selection: The course has 7 places for applicants from each of the programs A, C, D and L. Selection within each program is based on the number of higher education credits achieved within the program. In case there are places left after regular selection, these are distributed, according to the same selection principle, to the remaining applicants.

Reading list

- High-Level Expert Group on Artificial Intelligence: Ethics Guidelines for Trustworthy AI. 2019. Brussels: European Commission.
- Kitchin, R., Cardullo, P., and Di Feliciantonio, C: Citizenship, Justice, and the Right to the Smart City. Bingley, UK: Emerald Publishing, 2019. In Paolo Cardullo, Cesare Di Felicaiantonio, & Rob Kitchin (Eds.), The right to the smart city (First edition.) (pp. 1–24).
- Brauneis, R., & Goodman, E. P: Algorithmic transparency for the smart city. 2018. Yale Journal of Law & Technology, 20, 103–176.
- Barns, S: City Bricolage: Imagining the City as a Platform. Singapore: Palgrave Macmillan, 2020. In Platform Urbanism: Negotiating Platform Ecosystems in Connected Cities (pp. 171–191).
- Cardullo, P., & Kitchin, R: Being a “citizen” in the smart city: up and down the scaffold of smart citizen participation in Dublin, Ireland. 2019. GeoJournal, 84(1), 1–13.
- Goodman, Ellen P., & Powles, Julia: Urbanism under google: lessons from sidewalk Toronto. 2019. Fordham Law Review, 88, 457.
- Cugurullo, Federico, Caprotti, Federico, Cook, Matthew, Karvonen, Andrew, McGuirk, Pauline, & Marvin, Simon: Introducing AI into urban studies. London and New York: Routledge, 2024. In Federico Cugurullo, Federico Caprotti, Matthew Cook, Andrew Karvonen, Pauline McGuirk, & Simon Marvin (Eds.), Artificial Intelligence and the City: Urbanistic Perspectives on AI (pp. 1–19).
- Datta, Ayona: The smart entrepreneurial city: Dholera and 100 other utopias in India. London and New York: Routledge, 2015. In Simon Marvin, Andrés Luque-Ayala, & Colin McFarlane (Eds.), Smart Urbanism: Utopian vision or false dawn? (pp. 52–70).
- Haarstad, Håvard: Constructing the sustainable city: examining the role of sustainability in the “smart city” discourse. 2017. Journal of Environmental Policy & Planning, 19(4), 423–437.
- Hildebrandt, M., & De Bois, A: Law for Computer Scientists (Vol. 13500). Springer International Publishing, 2023. https://doi.org/10.1007/978-3-031-24349-3_14
- Larsson, S., Haresamudram, K., Högberg, C., Lao, Y., Nyström, A., Söderlund, K., & Heintz, F: Four Facets of AI Transparency. Edward Elgar Publishing, 2023. in Lindgren, S., (ed.) Handbook of Critical Studies in Artificial Intelligence.
- Wernick, A. & Artyushina, A: Future-proofing the city: A human rights-based approach to governing algorithmic, biometric and smart city technologies. 2023. Internet Policy Review, 12(1). https://doi.org/10.14763/2023.1.1695
- White, James, & Larsson, Stefan: Disruptive data: historicising the platformisation of Dublin’s taxi industry. 2023. Buildings and Cities, 4(1), 838–850.

- Additional reading will be provided during the course.

Contact

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