



INFORMATION, COMMUNICATION, AND THE EVOLVING CONCEPTIONS OF URBAN SPACE

Instructor: Ali Fard (afard@uwaterloo.ca)

Course Schedule: Wednesday 9:30am-12:20pm

Office Hours: Wednesday 1pm-4pm (by Appointment only Please)

1 // INTRODUCTION

The rapid development of information and communication technologies after World War II has greatly influenced the conception of urban space within the disciplines of architecture and design. New modes of communication, together with the invention of personal computer and expanding capacity of modern societies to generate, absorb, and analyze massive amounts of information, have generated a number of ideologies regarding the space of cities and urban environments. Since the end of WWII computers, and communication technologies have come to define an evolving ethos within spatial fields dealing with the analysis, management, and design of urban environments, that is in need of a critical unpacking. While the relationship between information and communication technologies (ICTs) and space is understandably complex and transcends rigid structuration, the characteristic dualities of ICTs—their physical and virtual materialities, articulated through hardware and software systems—has for the most part dominated the spatial reading of these technologies. On one hand, these technologies are generating new spatial conditions for communication, participation, sociability and commerce, different from the “real space” of homes, city squares or streets—what has been referred to as “virtual space” or “cyberspace”. On the other hand, various material and infrastructural imprints required by ICTs—such as data centers, fiber optic cables, Internet exchange centers and IT office parks—have contributed to a

great buildup of material and spatial conditions in physical space. Yet the increasing intricacy of the imbrication of the digital and the physical cannot be solely explained through this dualism. This condition calls for a hybrid reading of the geography of information and a contextualization of the interaction between the virtual and the physical imprints, the social and the spatial processes, and the software and the hardware systems of ICTs.

This seminar attempts to situate the influence of ICTs within the spatial conceptions of the past and the present through both historical and theoretical readings. The aim is to develop a contextualized and grounded understanding of the relationship between evolving urban conceptions and the fluidity of ICTs that go beyond the corporate ideologies and technological utopianism often associated with these technologies. To fully contextualize the emerging geographies of information, this seminar presents material from diverse fields of social sciences, economics, geography, urban studies and planning, which, combined with readings from architecture and design, will map a broad, but a more critically situated, perspective of the multi-dimensional influence of ICTs on how we imagine, monitor, analyze, manage, conceptualize and construct urban spaces. A grounded reading of the virtual and the physical imprints of information and communication technologies questions the prevalent understanding of these technologies as naturally hypermobile, democratic, and sustainable. Hence, complicating their relationship to urban space.

2 // SEMINAR STRUCTURE

The course is organized around a set of historical and theoretical readings as well as a research project.

The readings are structured in three modules of Foundations, Histories and Currents. The Foundations module presents a set of theoretical readings that will act as a foundational toolbox for the critical analysis of both historical and contemporary relationships between ICTs and urban space. The Histories module maps a set of parallel but related trajectories of the development of technological networks, with an emphasis on technologies of information and communication, since WWII. This module traces the influence of technologies of information and communication on how urban environments are viewed, analyzed, imagined, and operationalized. The Currents module presents a number of current debates on the development of ICTs and their relationship to the emerging global forms of urbanization. Together these three modules will situate the discussion in both history and theory and will provoke a critical discussion of the forms, spaces, and ideologies generated by the relationship between ICTs and urbanism over the past sixty years, as well as their future. Since the readings are central to the seminar format and our discussions in class, students are required to read and be prepared to discuss their understanding of the readings for each class.

In parallel to the readings, a research project will investigate various aspects of the contemporary geographies of information. Organized around a set of subthemes (including, but not limited to: energies, mobilities, politics, economies, cultures), and through well composed case studies, the project aims to ground and contextualize our reading of the forms and processes that contribute to the continual buildup of materials, labor, and capital around ICTs, and examine the role of urban space in this buildup. These investigations will generate a new spatial understanding of the links between ICTs and urban environments and gauge the role of design and architecture within this discourse. The project will be extensively discussed in class.

Weekly Reading Presentation

In addition to the research project, which spans the entire term, students in groups of 2-3 will prepare a presentation of the weekly readings of the Histories module for the class. Following the presentation the team will lead a discussion session. It is important for the presentations to go beyond the readings and to offer an argument to be discussed in class. The ideal presentation will include examples and case studies that will further illustrate the arguments and the viewpoints of the readings and the team. The specifics of the presentations as well as a set of requirements will be discussed in class.

3 // EVALUATION

Students will be evaluated based on their performance, attendance and development over the course of the semester, and according to the following breakdown:

Weekly Reading Presentation and Discussion Lead	25%
Attendance and Participation	20%
Final Research Project	55%
- Research Topic Presentation	15%
- Final Presentation	30%
- Research Document	10%

4 // COURSE SCHEDULE

** Please note that readings may be added or substituted based on the discussions in class. These changes will be announced in advance and will be communicated to students in a timely fashion.

Week 1 // JAN 7 // Introduction

Introduction to the course, the structure of the seminar, and the expectations.

Recommended readings:

Henri Lefebvre. "Plan of the Present Work." *The Production of Space*. Cambridge, US; Oxford, UK: Blackwell, 1991. 1-67.

Week 2 // JAN 14 // Foundations I: Substitution – Revolutionary Spatial Transformation and Techno-Utopianism

Required readings:

Paul Virilio. "The Third Interval." *Open Sky*. London; New York: Verso, 1997. 1-21.

Nicholas Negroponte. "The Post-Information Age." *Being Digital*. New York: Knopf, 1995. 163-171.

Martin Pawley. "Architecture Versus the New Media." *Intelligent Environments: Spatial Aspects of the Information Revolution*. Ed. Peter Droege. Amsterdam: Elsevier, 1997. 539-549.

Week 3 // JAN 21 // Foundations II: Co-Evolution – Parallel Spatial Development of Technology and Society

Required readings:

Manuel Castells. "The Space of Flows." *The Rise of the Network Society*. Chichester, West Sussex ;Malden, MA: Wiley-Blackwell, 2010. 407-459

Saskia Sassen. "Reading the City in a Global Digital Age." *Urban Screens Reader*. Eds. Scott McQuire, Meredith Martin, and Sabine Niederer. Amsterdam: Institute of Network Cultures, 2009. 29-44.

William J. Mitchell. "Recombinant Architecture." *Intelligent Environments: Spatial Aspects of the Information Revolution*. Ed. Peter Droege. Amsterdam: Elsevier, 1997. 551-582.

Week 4 // JAN 28 // Foundations III: Recombination - Complexity, Hybridity and Cyborganity

Required readings:

Stephen Graham and Simon Marvin. "Introduction." *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. New York: Routledge, 2001. 7-36.

Timothy Luke. "At the End of Nature: Cyborgs, 'Humachines', and Environments in Postmodernity." *Environment and Planning A* 29.8 (1997): 1367-80.

Matthew Gandy. "Cyborg Urbanization: Complexity and Monstrosity in the Contemporary City." *International Journal of Urban and Regional Research* 29.1 (2005): 26-49.

Week 5 // FEB 4 // Histories I: Progress, Modernization, and the Urban Underground

Required readings:

Nigel Thrift. "Inhuman geographies: Landscapes of speed, light and power." *Spatial Formations*. London: Routledge, 1995. 256-310.

Stephen Graham and Simon Marvin. "Constructing the Modern Networked City, 1850-1960." *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. New York: Routledge, 2001. 39-89.

Erik Swyngedouw and Maria Kaika. "Fetishizing the Modern City: The Phantasmagoria of Urban Technological Networks." *International Journal of Urban and Regional Research* 24.1 (2000): 120-38.

Recommended readings:

Lewis Mumford. *The City in History: Its Origins, its Transformations, and its Prospects*. New York: Harcourt Brace Jovanovich, 1961.

Week 6 // FEB 11 // Histories II: The Info-Military-Industrial Complex

Required readings:

Jennifer Light. "The City as a Communication System." *From Warfare to Welfare: Defense Intellectuals and Urban Problems in Cold War America*. Baltimore: The Johns Hopkins University Press, 2003. 35-54.

Paul Edwards. "Why Build Computers," and "SAGE." *The Closed World: Computers and the Politics of Discourse in Cold War America*. Cambridge MA: The MIT Press, 1996. 43-111.

Week 7 // FEB 18 // Break

NO CLASS – READING BREAK

Week 8 // FEB 25 // Histories III: Cybernetics and Urban Communication

Required readings:

Mark Wigley. "Network Fever." *Gray Room*.4 (2001): 83-122.

Tange, Kenzo. "Function, Structure and Symbol." Kenzo Tange, 1946-1969; *Architecture and Urban Design*. Ed. Udo Kultermann. New York: Praeger, 1970. 240-245.

Hadas Steiner. "Systems." *Beyond Archigram: The Structure of Circulation*. New York: Routledge, 2009. 182-221.

Jennifer Light. "Cybernetics and Urban Renewal." *From Warfare to Welfare: Defense Intellectuals and Urban Problems in Cold War America*. Baltimore: The Johns Hopkins University Press, 2003. 55-94.

Week 9 // MAR 4 // Histories IV: The City, Contested

Required readings:

Mark Wigley. "Resisting the City." *Transurbanism*. Ed. Arjen Mulder. Rotterdam: V2Publishing/NAi Pub, 2002. 103-121.

Melvin Webber. "Order in Diversity: Community without Propinquity." *Cities and Space: The Future use of Urban Land*. Ed. Lowdon Wingo. Baltimore: John Hopkins University Press, 1963. 23-54.

Stephen Graham. "From dreams of transcendence to the remediation of urban life." *The Cybercities Reader*. London ;New York: Routledge, 2004. 1-29.

Week 10 // MAR 11 // Histories V: Digitization and the Urban

Required readings:

Florian Roetzer. "Outer Space or Virtual Space? Utopias of the Digital Age." *The Virtual Dimension: Architecture, Representation and Crash Culture*. New York: Princeton Architectural Press, 1998. 121-143.

Antoine Picon. "The City in the Digital Sprawl." *Digital Culture in Architecture*. Basel: Birkhauser, 2010. 171-208.

Robert Latham and Saskia Sassen. "Introduction." *Digital Formations*. New Jersey: Princeton University Press, 2005. 1-34.

Week 11 // MAR 18 // Research Project Presentations – Part 1

Short presentations on the research topic, current progress, methodology and the aims of the project. 15-20 minutes each group.

Week 12 // MAR 25 // Currents I: Beyond Cities - Emerging Forms of Urbanization

Required readings:

Stan Allen. "Infrastructural Urbanism." *Points + Lines : Diagrams and Projects for the City*. New York: Princeton Architectural Press, 1999. 47-57.

Neil Brenner, and Christian Schmid. "Planetary Urbanisation." *Urban Constellations*. Ed. Matthew Gandy. Berlin: Jovis, 2011. 10-13.

Week 13 // APR 1 // Currents II: Beyond Smart? Examining the Neo-Cybernetic Urban Ideologies

Required readings:

Anthony Townsend. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W. W. Norton & Company, 2014.

Rem Koolhaas. "My Thoughts on the Smart City." Edited transcript of a talk given at the High Level Group meeting on Smart Cities, Brussels, 24 September 2014. <https://ec.europa.eu/commission_2010-2014/kroes/en/content/my-thoughts-smart-city-rem-koolhaas>

Rob Kitchin and Martin Dodge. *Code/Space: Software and Everyday Life*. Cambridge: MIT Press, 2014.

TBD // Research Project Presentations – Part 2

Final Presentation of the research conducted by students over the term. Will be organized during the review period. 25-30 minutes each group. Exact date will be announced later.

5 // ACADEMIC ISSUES

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check <https://uwaterloo.ca/academic-integrity/> for more information.]

Grievance: Students, who believe that a decision affecting some aspect of their university life has been unfair or unreasonable, may have grounds for initiating a grievance. Students should read [Policy #70](#), Student Petitions and Grievances, Section 4. When in doubt, students must contact the department's/school's administrative assistant who will provide further assistance.

Discipline: Students are expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions. Students who are unsure whether an action constitutes an offense, or who need help in learning how to avoid offenses (e.g., plagiarism, cheating) or about 'rules' for group work/collaboration should seek guidance from the course instructor, academic advisor, or the Associate Dean of Science for Undergraduate Studies. For information on categories of offenses and types of penalties, students should refer to [Policy #71](#), Student Discipline. For information on typical penalties, students should check [Guidelines for the Assessment of Penalties](#).

Appeals: A decision or penalty imposed under Policy 33 (Ethical Behavior), Policy #70 (Student Petitions and Grievances) or Policy #71 (Student Discipline) may be appealed, if there is a ground. Students, who believe they have a ground for an appeal, should refer to [Policy #72](#) (Student Appeals).

Note for Students with Disabilities: [AccessAbility Services](#), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If students require academic accommodations to lessen the impact of their disability, they should register with AccessAbility Services at the beginning of each academic term.

Accommodation: Should students require accommodation due to illness, they must provide a Verification of Illness Form to support their requests. [Check <https://uwaterloo.ca/registrar/current-students/accommodation-due-to-illness> for more information.]

Exam Period Travel: Student travel plans are not considered acceptable grounds for granting an alternative examination time.