Dalhousie University  
School of Architecture  

ARCH 5104.03  Urban Systems  

Term:  Fall 2015  
Date/time:  Monday 9:00 am-12:30 pm, except where indicated otherwise on the course schedule  
Rooms:  Medjuck Building HA18, Sexton House E108  
Instructor:  Christine Macy  

This course is directed to MArch students in the M2 and M5 terms, and to MPlan students taking PLAN 6000 Individual project. Enrollment is limited to 20 students. Interested students are asked to write a letter of interest to the instructor, explaining which urban system the student wishes to study and its relation to their M2 studio, M5 thesis or Plan 6000 individual project work.

Calendar description  
This seminar examines the infrastructure of the metropolis and its influence on urban form and development. It considers transportation, energy use, water distribution, civic institutions, spaces of social exchange, and ecological systems. It emphasizes new concepts of what is “urban” and what is “natural,” referring to innovative urban design work worldwide.

Learning objectives  
By the end of this course, the student will have an understanding of the city as a networked ecology of systems which mediate nature and culture, and which determine urban form, its growth and shrinkage. The student will be able to identify and research an urban system, present it visually, explore its implications for design/planning proposals, and evaluate such proposals in terms of the functioning of the urban system.

Course format  
This seminar includes six lectures, workshops on framing a research project, individual field work, class presentations and four seminars investigating relevant scholarship in the research area.
Urban systems theories

1. **Rethinking the ‘urban’ and the ‘natural’**
   - Picturesque — Wilderness Conservation — Garden City — Landscape Urbanism

2. **Urban/natural systems theories/representations**
   - Landscape — Grid — Tree/Stem/Web — Rhizomes/Atmospheres — Cellular Automata/Agent-Based Models

Research clusters | Urban systems practice

1. **Water systems**

2. **Food systems**
   - Forms of land tenure: urban commons, community gardens, allotment gardens, greenbelts. Agricultural practices: organic, hydroponic, bio-intensive, bio-dynamic farming, closed-loop and open systems (requiring inputs and outputs). Food distribution systems: sale at point of production (farmer’s market), small retailer, large distribution center, urban market.

3. **Green systems**
   - Scales of park design: pocket or pop-up park, courtyard, neighbourhood park, urban park, commons, greenbelt. Ecological-urban interface: a dynamic zone for riparian or coastal defence. Other interfaces: connector or buffer zone. Functions of park design: productive, sportive, cultural, social, retreat. Urban forest, parkway and promenade. Urban beach, riparian park. Wildlife corridor, urban animal habitat.

4. **Circulation systems**

Assignments | evaluation

Each student will investigate one urban/natural system, explore it in some detail through a case study, situate the study theoretically and philosophically, and use their knowledge to inform their design work, if applicable. They will develop their study through three iterations, which overlap in sequence:

1. **Field work** 35%
   - a) Select urban system and develop work plan. **Due September 24, 2015.**
   - b) Field work | case study: documentation, analysis, reflection. Conducted from September 28 to October 9.
   - c) Present field work to the class. **Due October 16 or 26, 2015.**
   - Evaluation criteria are: completion of required components, quality of work (accuracy, depth of investigation, contextualization, presentation), timely submission and participation in presentation. Late work will be penalized 1% per day.

2. **Bringing it to design/planning** 15%
   - Development of design/planning targets for the system. **Due October 30, 2015.**
   - Evaluation criteria are: incorporation of research carried out in the seminar to the design and planning work, and evidence of its relevance or value to that work.

3. **Research paper** 50%
   - Research paper on the case study and system, framing it theoretically and contextually (2500 wds). **Due November 30, 2015.**
   - Evaluation criteria are: completion of required components, quality of work, use of relevant readings correctly attributed, presentation, timely submission.
## Course Schedule

### LECTURES & WORKSHOPS

**Wk 1**  
**M 9/14**  
9:00-9:30  
Introduction to course  
**Lecture 1:** Rethinking the ‘urban’ and the ‘natural’.  
**Workshop 1:** Assemble in research clusters, develop individual research work plans. Students choose a research cluster and break into seminar groups of max. 8 people. Students focus on an urban system and begin to develop their individual research work plan.

9:30-10:30  
10:45-12:30  
**Workshop 1:** Continue work on individual research work plans. Students identify their study system and develop their field work plan for the next two weeks.

**Wk 2**  
**M 9/21**  
9:00-10:00  
**Lecture 2:** Theories and representations of urban and natural systems.  
**Workshop 2:** Continue work on individual research work plans. Students identify their study system and develop their field work plan for the next two weeks.

10:15-12:30  
**Due: Work plans.** Hand-in to CM on letter-sized paper, double spaced with images as needed.

**Th 9/24**  
5:00 pm  
Due: Work plans.

**Wks 3-4**  
**M 9/28 - 10/5**  
**INDEPENDENT FIELD WORK [M2 studio field trips / M5 Plan 6000 local case studies]**

**Wk 5**  
**M 10/12**  
Thanksgiving - No class

### PRESENTATIONS & WORKSHOPS

**Wk 6**  
**M 10/19**  
9:00-12:30  
**Presentations:** Groups 1 & 2. Overview of cluster findings framed theoretically and 8 brief individual presentations of field trip / case study findings on their system.

**Wk 7**  
**M 10/26**  
9:00-12:30  
**Presentations:** Groups 3 & 4. Overview of cluster findings framed theoretically and 8 brief individual presentations of field trip / case study findings on their system.

**F 10/30**  
5:00 pm  
Due: Design targets for the system.

### LECTURES & SEMINARS

**Wk 8**  
**M 11/2**  
9:00-10:00  
**Lecture 3:** Urban water systems  
**Seminar 1:** Scholarship creating the research area  
Groups 1 & 2

**HA18**  
10:15-11:15  
**Groups 3 & 4**

**E108**  
11:30-12:30

**Wk 9**  
**M 11/9**  
9:00-10:00  
**Lecture 4:** Urban food systems  
**Seminar 2:** Scholarship creating the research area  
Groups 1 & 2

**HA18**  
10:15-11:15  
**Groups 3 & 4**

**E108**  
11:30-12:30

**Wk 10**  
**M 11/16**  
9:00-10:00  
**Lecture 5:** Urban park systems  
**Seminar 3:** Scholarship advancing the research area  
Groups 1 & 2

**HA18**  
10:15-11:15  
**Groups 3 & 4**

**E108**  
11:30-12:30

**Wk 11**  
**M 11/23**  
9:00-10:00  
**Lecture 6:** Urban circulation systems  
**Seminar 4:** Scholarship advancing the research area  
Groups 1 & 2

**HA18**  
10:15-11:15  
**Groups 3 & 4**

**E108**  
11:30-12:30

**Wk 12**  
**M 11/30**  
Due: Research paper (2500 words)
Readings
This is a resource list to get you started in your chosen area of focus.

General - Systems
Berger, Alan. Systemic design can change the world. Sun Architecture, 2009

General - Environment

General - Urbanism
Kapilos, George Thomas, Interpretations of nature: contemporary Canadian architecture, landscape & urbanism, McMichael Canadian Art Collection, 1994.
Van der Ryn, Sim & Peter Calthorpe, Sustainable Communities: a new design synthesis for cities, suburbs, & towns, Sierra Club Books, 1986.

General - Infrastructure
Hayes, Brian, Infrastructure: a field guide to the industrial landscape, W.W.Norton, 2005
Vamalis, Kazys, ed. The Infrastructural City, Actar, 2008.
Research Cluster One: Water systems

Macy, Christine, Greening the City: Ecological Wastewater Treatment in Halifax, Dalhousie School of Architecture, 2001.

Research Cluster Two: Food systems

Gorgolewski, Mark, June Komisar & Joe Nasr, eds., Carrot city: creating places for urban agriculture, Monacelli, 2011.
McAdam, Rhona, Digging the City, Rocky Mountain Books, 2012.
Resource Centre on Urban Agriculture and Food Security http://www.ruaf.org
White, Mason & Maya Przybylski, eds. On Farming (Bracket Almanac 1). 2010

Research Cluster Three: Green systems

Hall, Lee, Olmsted’s America: an “unpractical” man and his vision of civilization, Little Brown.
Mosbach, Catherine. Mosbach. 2010

Research Cluster Four: Circulation systems

Appleyard, Donald, Kevin Lynch and John R. Myers, View From the Road, Joint Centre for Urban Studies, MIT and Harvard University, 1963.
Ciclovía http://www.cicloviashorizontales.org/en/