Green Network Planning

This course introduces a comprehensive, landscape-based approach to long-range planning of the greenspace structure of cities to enhance both ecosystem and human purposes. Green Networks are an interconnected network of green patches and corridors incorporating parks, natural areas, remnant green spaces, streets and other vegetated spaces of the city. This course investigates a proactive, long-term planning approach enabling these green networks to be considered in conjunction with growth and development planning.

This course will introduce the literature, theory and principles of green network planning, including a bit of history, governance, approaches to systemic greenspace planning, analysis and measuring, additional functions and design considerations applied at both city and neighbourhood scales. The course will also introduce the important aesthetic and psychological role that vegetation and especially trees play in the urban environment. Through projects students will analyze and measure spatial greenspace distribution and make future propositions. The instructor and guest lecturers will provide depth by presenting examples of green network planning at the scales of the city, the neighborhood and specific sites.

The urban forest, including all urban vegetation, is the foundation of green networks. The urban forest is crucial to an ecologically integrated urban fabric and performs important ecosystem services. When well connected, the urban forest increases habitat connectivity, sequesters carbon, helps to reduce the urban heat island effect, filters particulates from air helping the city to mitigate air pollution and climate change, and detains and reduces urban runoff. Trees in particular also play an important role in urban design, creating spatial structure to parks, streetscapes and the public realm. Urban greenery, in all of its manifestations, improves the aesthetic quality and sense of place of all communities and landscapes.
LEARNING OBJECTIVES:
• Students will understand the core concepts and approaches to greenspace planning
• Students will understand inter-relationships between green networks and urban forestry, green infrastructure, active mobility
• Students will know how to conduct background analysis and evaluative methods of urban green systems
• Students will understand the foundational components of a green network plan

Graduate students:
• will also know the literature and relevant urban design precedents related to this course and the applied projects

COURSE FORMAT:
This will be a lecture-based course, with the content reinforced via applied projects. Prior to each class students will be expected to complete required reading. Three short quizzes over the term will test most important concepts and knowledge. The projects will focus on learning methods of analysis and evaluation as well as on learning to make propositions about the future.

The class will meet twice each week for 1.5 hours each meeting.

READINGS:
Students are expected to have read the required readings prior to class. See the Schedule on the class blog for links to the readings for each class. “Attendance questions” (see below) may be based on readings.

ASSIGNMENTS:
Assignments will include: three applied projects in which student teams or individuals study an area of Vancouver and conduct both analytical exercises and planning propositions. There will also be three quizzes, and one question to answer at the start of each class as evidence of attendance.

LARC 553C graduate credit:
Graduate students will conduct precedent research and present the precedents to the class on January 28 or 30.
EVALUATION:

**Undergraduate students:**
Attendance*: 10%
Quizzes (3 at 10% each): 30%
Project 1 (team): 10%
Project 2: (team): 25%
Project 3: (individual): 25%

**Graduate students:**
Attendance*: 10%
Quizzes (3 at 5% each): 15%
Precedent research/presentation: 15%
Project 1 (team): 10%
Project 2: (team): 25%
Project 3: (individual): 25%

* A question will be posed at the start of class. Students will answer it on line as proof of attendance.

CLASS BLOG AND CANVAS sites:
All course materials including the syllabus, up to date schedule, assignments, references and communications with the class will be found on the course blog. (You must be registered with UBC Blogs to access the course.) [https://blogs.ubc.ca/greennetworks/](https://blogs.ubc.ca/greennetworks/)

We will use the class Canvas site ONLY for questionnaires, quizzes and submitting required assignments. See the Canvas site > Quizzes or >Assignments for where to upload your assignments.

POLICIES:
If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me soon. Please request that the Counselor for Students with Disabilities send a letter verifying your disability.

*Plagiarism is not tolerated at UBC. Students should consult [http://vpacademic.ubc.ca/academic-integrity/ubc-regulation-on-plagiarism/](http://vpacademic.ubc.ca/academic-integrity/ubc-regulation-on-plagiarism/) if they are unclear what plagiarism is and the consequences of plagiarism.*
LARC 444/553  Green Network Planning Schedule
Monday & Wednesday 9:30 - 10:50, Room 40 FNH

WEEK 1
January 2  Course introduction
READING: Girling & Kellett, Chapter 1, p. 1-19
Assign Project 1  Green Networks and Fabric of Vancouver

WEEK 2  FOUNDATIONS
January 7  Definitions & types
READING:
Erickson, Chapter 1, pages 3-19, 32-37 (PDF on blog) & Austin, Ch. 1, p. 1-14 (e-book)

January 9  Greenspace planning: A short history
READING:
Heckscher, Ch. 7 The City Park p. 161-173, Ch. 8 Park Systems p. 192-213 (PDF on blog)

WEEK 3
January 14  Green Networks in Vancouver
READING:
Quayle (1995) Urban Greenways and Public Ways (link on blog)

January 16  Project 1 Review
Gallery style review of student projects.
LOCATION: Landscape Architecture Annex, 2371 Main Mall.

WEEK 4  PLANNING
January 21  Comprehensive greenspace plans
READING:
Girling and Kellett, Chapter 3 and 6
REFERENCE BREATHE: Edmonton’s Green Network Strategy (link on Blog)
ASSIGN: Project 2

January 23  Urban Green Equity- Guest Lorien Nesbitt
READING:

WEEK 5
January 28  Precedent study presentations (graduate students)
January 30  Precedent study presentations (graduate students)
QUIZ #1 opens (deadline- February 6)
WEEK 6  MEASURING
February 4  Valuing green systems: Ecosystems Services
Case study of Olympic Village
READING: Austin, Chapter 4, p. 58- 91.
REFERENCE: Patrick Mooney 2014 Ecosystem Services, Olympic Village study
(PDF on blog)

February 6  Measuring/evaluating Green Networks: Spatial Indicators
READING:
Kellett: CMHC Indicators Vol 1 (PDF on blog)

WEEK 7  GOVERNANCE
February 11  Governance of Urban Greenspaces
READING Erickson, Ch. 2, p. 41- 59 (PDF on Blog)

February 13  Planning regional greenspace: Guest lecturer Jeff Fitzpatrick
READING: (TBD- Metro Van document)
QUIZ # 2 opens (deadline March 4)

February 18 - 22  READING BREAK

WEEK 8
February 25  Project 2 presentations
Location: Room 40 FNH

February 27  Project 2 presentations
Location: Room 40 FNH

Project 2: submit PDFs on Canvas by midnight tonight!

WEEK 9  FUNCTIONS
March 4  Biophilia: people and nature
READING: Beatley, Ch. 1, p. 1-16, Ch. 3, p. 45-81
ASSIGN: Project 3

March 6  Biodiversity in Vancouver- Nick Page, City of Vancouver
READING: Austin Ch. 6 p. 106- 127; City of Vancouver, Biodiversity Strategy

WEEK 10
March 11  Green Networks and Rainwater Management
READING: Girling & Kellett, Ch. 7; Austin, Chapter 7 & 8

March 13  Green Networks and Active Transportation
READING: Transport Canada (2011) Active Transportation in Canada (link on blog)
QUIZ # 3 opens (deadline March 20)
### WEEK 11
**March 18**
**Designing the Urban Forest- Trees and Urban Design**
READING: Arnold, Trees in Urban Design, Ch. 3 (PDF on blog)

**March 20**
**Designing the Urban Forest- Case Study East Fraserlands** - Patrick Mooney
READING: Mooney, Urban Songbird Habitat Landscape Guidelines (PDF on blog)
REFERENCE: PWL Partnership, East Fraserlands Public Realm Plan (link)

### WEEK 12
**March 25**
**Planting healthy urban trees** (latest on selection and planting)
READING: James Urban, Part 1, Ch. 1 p. 3-14, Part 2, Ch. 1 & 2, p. 147-162. (PDF on blog)

**March 27**
Field trip: **Trees at the Olympic Village** - Guests TBA
Meeting time and place to be announced in class and on blog.

### WEEK 13
**April 1**
**Work/help session Project 3**
Bring your in-process Project 3 and get help/input.

**April 3**
**Work/help session Project 3**
Bring your in-process Project 3 and get help/input.

### DEADLINE
**FINAL PROJECT 3 SUBMISSIONS DUE: Friday April 12**
REFERENCES:

Primary readings:

Additional references:
Hung, Ying-Yu, Gerdo Aquino (2011) Landscape Infrastructure: Case Studies by SWA, Basil: Birkhauser GMBH.
Steiner, Frederick, Armando Carbonell, George F. Thompson, editors (2016) Nature and Cities: The ecological imperative in urban design and...
planning, Cambridge, MA: The Lincoln Institute of Land Policy.


Web references:


City of Vancouver: Developing Vancouver’s Urban Forest Strategy http://vancouver.ca/home-property-development/urban-forest-strategy.aspx


Low Impact Development Center: http://www.lowimpactdevelopment.org/

SEEDS Sustainability Library: https://sustain.ubc.ca/courses-teaching/seed-program/seeds-sustainability-library


US EPA Green Infrastructure site: http://water.epa.gov/infrastructure/greeninfrastructure/
