

**PLAN 510 Environmental and Sustainability Concepts
in Planning Practice**

2 Credits

Term 1 – Fall 2018

Tuesday 9:00-12:00

1933 West Mall Rm. 150

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Course Description and Overview

This is an introductory course to environmental and sustainability planning. In only eight weeks, we will rapidly review the essential concepts that planners should know about environmental and sustainability planning. Topics include: an introduction to ecology; traditional ecological knowledge, ecological restoration; landscape ecology; spatial analysis and planning; the ecological footprint; ecosystem services; energy planning; climate change and adaptation; transportation policy, and environmental governance. Each of these topics will be studied within a planning context, and with the goal of preparing you to address these issues in professional practice.

As a survey course, our focus will be on major themes and core principles, rather than detailed or technical analysis that might be offered in a more specialized course. However the advantage of reviewing multiple environmental topics is that we will be able to consider the connections across sustainability problems.

Course Format

We will meet once a week for three hours. Classes will be a mixture of lectures and case-based discussions. The lectures will provide us with the substantive knowledge, core principles, or tools used to address sustainability challenges. The cases will allow us to apply this knowledge to a specific scenario. In most cases, there will be no obvious solution or answer to the planning problem studied. However in most instances, a firm understanding of sustainability principles may suggest alternative courses of action.

Learning Objectives

Our goal is to become proficient in the fundamental principles and themes of sustainability planning. By the end of the course, students should be able to:

- Describe core principles in ecology and their application to planning practice
- Propose site designs that meet ecological objectives
- Perform basic manipulations and calculations with spatial data
- Identify planning tools used to address sustainability challenges
- Understand your personal knowledge gaps with regard to sustainability planning

Attendance

Students are expected to attend all class sessions and actively participate in discussion.

Requirements and Grading

There will be four assignments and occasional quizzes. Given the large size of the class, feedback on the assignments will be limited in scope.

Class Participation	30%
Quizzes	10%
Assignment 1. Sustainability Plans	15%
Assignment 2. Designing Ecological Plans	15%
Assignment 3. Spatial Data and GIS	15%
Assignment 4. Negotiation Debrief	15%

Class Participation & Learning with the Case Method

Engaging in class discussion is an important part of this course and a considerable amount of time is needed to prepare for the case-based discussions. During the case discussions, we will seek to apply the sustainability principles discussed in lecture to a real-world planning problem. Cases are organized around a problem or decision that needs to be made, and students will be expected to present a recommendation and defend their position.

Suggestions and guidance on how to prepare for case based learning will be provided. The aim of the cases is to train you to think like a decision maker. The cases will require you to select a course of action based on sound reasoning. What would you do and why? You should come to class prepared to defend your recommendation. Strong recommendations about choice of action should involve some clarity about objectives, alternatives, and consequences.

Quizzes

Short and unannounced quizzes will be sprinkled throughout the semester. They will be three to five questions on the assigned readings. The quizzes are meant to reward students that have prepared for class but be less likely to participate in discussion.

Assignment 1. Sustainability Plans

Our first assignment will take a look at how cities are developing sustainability plans. As a class, we will collectively analyzing the central elements of sustainability or biodiversity plans in cities throughout Canada and the world. Each student will select a city, read their plan and contribute to a collective document in which these plans are compared. We will discuss our collective findings in class.

Assignment 2. Designing Ecological Plans

You will be asked to complete the two exercises on designing ecological plans in the Perlman and Milder book to prepare for our class discussion on October 9th. For this assignment only, you may work with a colleague or on your own. We will discuss your assignments in class on the day it is due.

Assignment 3. Spatial Data and GIS

As planners you should be familiar with spatial data. This assignment is designed to introduce you to geographic information systems (GIS) and show you basic manipulations and transformations. This assignment is due October 16th.

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Assignment 4. Negotiation Debrief

On October 30th we will have a negotiation exercise that will introduce you to how environmental policy is crafted on the international stage and allow you to practice your negotiation skills. After the negotiation exercise, you will be asked to write a one-page essay that debriefs your experience. This assignment is due on Friday, November 2nd. Please print a copy and leave it in my mailbox.

Course Materials

The readings for the course have been printed by the Course Materials Office and will be available at the UBC bookstore. Students should bring the assigned readings with them to class for use in discussion. The bookstore will also have the two assigned books for this course:

Perlman, D.L., Milder, J.C. 2005. Practical Ecology for Planners, Developers and Citizens. Island Press. Washington DC.

Office Hours

My office hours are Thursday 3:00-4:00. You may schedule an appointment on a sign up sheet posted outside my office door. Come to talk to me about questions you have or come tell me how you think the course can be improved.

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at <http://calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,0>.

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Week 1. Introduction

September 11

Session 1. Course Overview, Sustainability & Planet Earth

Perlman, D.L., Milder, J.C. 2005. Practical Ecology for Planners, Developers and Citizens. Island Press. Washington DC.
Introduction, pgs 2-4
Chapter 1. Human Plans pgs 7-20.

Rockström, J. et al. 2009. A safe operating space for humanity. Nature 461:472–475.

Session 2. Traditional Ecological Knowledge

Huntington, H. P. 2000. Using Traditional Ecological Knowledge in Science: Methods and Applications. Ecological Applications 10:1270–1274.

Berkes, F., J. Colding, and C. Folke. 2000. Rediscovery of traditional ecological knowledge as adaptive management. Ecological Adaptations 10:1251–1262.

Cruikshank, J. 2004. Uses and abuses of ‘Traditional Knowledge’: Perspectives from the Yukon Territory. In Anderson, D.G., and M. Nuttall (eds) Cultivating Arctic Landscapes: Knowing and Managing Animals in the Circumpolar North. NY and Oxford: Berghahn Books.

Robbins, Jim. 2018. Native Knowledge: What Ecologists Are Learning from Indigenous People. Yale Environment 360. 26 April 2018.

Week 2. Ecological and Sustainability Planning Assignment 1 Due

September 18

Session 1. Ecological Principles, Populations, Communities and Resilience

Perlman, D.L., Milder, J.C. 2005. Practical Ecology for Planners, Developers and Citizens. Island Press. Washington DC.
Chapter 2. An Introduction to Ecology and Biodiversity
Chapter 3. When Humans and Nature Collides
Chapter 4. Change through Time
Chapter 5. Populations and Communities

Session 2. Sustainability and Biodiversity Plans

Guest, Jennifer Rae Pierce, SCARP PhD student

Week 3. Urban Metabolism

September 25

Session 1. Urban Ecology, Urban Metabolism & Water

Session 2. Case: Minto-Brown Island Park

Hammond, J. S. 2002. Learning by the case method. Harvard Business School. 9-376-241. Cambridge, MA.

Minto-Brown Island Park: A Case Study of Farming the Urban-Agricultural Interface. The Electronic

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Hallway. The Evans School of Public Affairs, University of Washington.

Week 4. Ecological Restoration

October 2

Session 1

Lecture: Ecological Restoration (or GIS Session)

Perlman, D.L., Milder, J.C. 2005. Practical Ecology for Planners, Developers and Citizens. Island Press. Washington DC.
Chapter 9. Restoration & Management

Session 2

Case: Savanna Restoration in Illinois

Packard, S. 1988. Just a Few Oddball Species: Restoration and the Rediscovery of the Tallgrass Savanna. Restoration & Management 6(1):13-20

Shore, D. Controversy Erupts Over Restoration in Chicago Area. 1997 Restoration & Management Notes 15(1):25-31.

Mendelson, J., Aultz, S.P., Mendelson, J.D. 1992. Carving up the Woods: Savanna Restoration in Northeastern Illinois. Restoration & Management Notes. 10(2):127-131

Week 5. Spatial Environmental Planning

Assignment 2 Due

Session 1. Landscape Ecology

October 9

Perlman, D.L., Milder, J.C. 2005. Practical Ecology for Planners, Developers and Citizens. Island Press. Washington DC.
Chapter 6. The Ecology of Landscapes

Forman, R.T.T. 1995. Land Mosaics: The Ecology of Landscapes and Regions. Cambridge University Press: Cambridge, United Kingdom. ISBN 0-521-47462-0
Chapter 1. Foundations pgs 3-22;
Chapter 13. Land planning and management pgs 435-441

Session 2. Designing Ecological Plans

Perlman, D.L., Milder, J.C. 2005. Practical Ecology for Planners, Developers and Citizens. Island Press. Washington DC.
Chapter 10. Ecologically Based Planning and Design Techniques
Chapter 11. Principles in Practice
Part 1. Residential Development at the Site Scale
Part 2. Planning for Growth by Listening to Ecology

Week 6. Ecological Economics

Assignment 3 (GIS) Due

Session 1. Ecological Footprint, Resilience & Ecosystem Services

October 16

Rees, W., and M. Wackernagel. 1996. Urban Ecological Footprints: Why cities cannot be sustainable and why they are key to sustainability. Environmental Impact Assessment and Review 9255:223-248.

Walker, B., Salt D, Reid, W. 2006. Resilience Thinking: Sustaining Ecosystems and People in a Changing World. Island Press. Washington DC. ISBN-10: 1597260932 Chapter 5. Making Sense of Resilience Thinking 111-124.

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Kallis, Giorgos. 2011. In Defence of Degrowth. *Ecological Economics* 70 (5). 873–80.
doi:10.1016/j.ecolecon.2010.12.007.

Chichilnisky, Graciela, and Geoffrey Heal. 1998. Economic Returns from the Biosphere. *Nature* 391: 629–30.

McCauley DJ. 2006. Selling Out on Nature. *Nature* 443(September): 7–8.

Session 2. Case: Adaptation to Sea Level Rise

Harvard Kennedy School: Miami Dade County and Sea Level Rise. HKS 2084.

Millard-Ball, A. 2018. Pedestrians, Autonomous Vehicles, and Cities. *Journal of Planning Education and Research* 38(1)6-12.

Week 7. Climate Change and Energy Policy

October 23

Case: Climate Change and Iceland’s Energy Policy

The Stern Review: The Economics of Climate Change. Summary of Conclusions 2006. The Government of the United Kingdom.

Harvard Kennedy School Case: Iceland’s Energy Policy: Finding the Right Path Forward. Cambridge, MA.

Case: Electrical Vehicles in San Francisco

Harvard Kennedy School. Electric Vehicles in San Francisco. HKS 1932.

Week 8. Negotiation Exercise & Wrap Up

October 30

Negotiation Exercise: The Mercury Game

The Mercury Game. MIT. General Instructions + Confidential Instructions.

Susskind, L., J. Cruikshank. 1987. Breaking the impasse: Consensual approaches to resolving public disputes. Basic Books. New York. ISBN 0-465-00751-1. 276 pgs. Chapter 4. Unassisted Negotiation 80-135.