

SUSTAINABLE COMMUNITY DESIGN

GEOGRAPHY 4771 – FALL 2012

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Office Hours:
*As posted on office door or by
appointment.*

Calendar Description:

A review of current literature and practical applications relating to concepts of sustainable community planning, with specific reference to transportation systems, land use zoning, water and energy usage, and agriculture. The measurement of urban sustainability and the sustainability of human activities at regional and city scales are also considered.

Prerequisite:

Geography 3731 or permission of the instructor.

Course Objectives:

- provide an appreciation for the principles and practice of Sustainable Community Design;
- explore the broader implications for society if urban sustainability is to be implemented;
- explore technical issues of sustainability with regards to: waste management; landscape naturalization; water and wastewater treatment; transportation; energy; green building standards; land use planning and policy;
- evaluate built city neighbourhoods against LEED-Neighbourhood Development standards, and determine opportunities to retrofit those neighbourhoods **OR** conceptualize how to build a LEED Platinum residential neighbourhood in the Thunder Bay region;
- provide opportunities for development and practice of writing and communication skills;

Course Grading:

Seminar 1: (topic assigned)	15
Seminar 2: (student choice)	
Proposal & Paper	25
Presentation	20
Group Project	
Meetings & Oral Reporting	15
Final Written Report	15
Class Participation	10
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Seminar topics (both topic assigned and topic of your choosing) are to be related the major themes of the course (refer to course schedule). Descriptions of student-led **seminars and audience expectations** and of the **group project applying the LEED neighbourhood standards** are provided on a subsequent page and in a separate handout, respectively.

Course Organization:

The course meets three hours per week (MWF, 11:30-12:20 in RB-1023). These meetings will be a mix of lectures, in-class discussions and student-led seminars. Early in the semester you will be required to select a seminar topic reflecting one of the course's key themes.

Course Resources:

- (REQUIRED) Course Manual entitled "Course Readings for Geography 4771"; {available in the Lakehead University bookstore.}
- (REQUIRED) U.S. Green Building Council (USGBC) 2009. *LEED 2009 for Neighborhood Development Rating System*. 148 pp. {printed and bound copies are available in the bookstore.}
- (OPTIONAL) Diamond, J. 2005. *Collapse: How Societies Choose to Fail or Succeed*. Penguin Paperbacks, 592 pp. {widely available at on- and off-campus bookstores}
- (OPTIONAL) Owen, D., 2009. *Green Metropolis: Why Living Smaller, Living Closer, and Driving Less Are the Keys to Sustainability*. New York, NY: Riverhead Books. {widely available at on- and off-campus bookstores}

To support the above, Dr. Randall may circulate additional articles and excerpts from books cited in class lectures. In addition, the following books are on reserve (or available electronically) in the Chancellor Paterson Library, which may be of use to supplement lecture material and in your research papers and seminars.

Alexander, C. *et al.* 1977. *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford University Press, 1171 pp.

Arendt, R. 1994. *Rural By Design: Maintaining Small Town Character*. Chicago: Planners Press, American Planning Association, 441 pp.

Barton, H. 2000. *Sustainable communities: the potential for eco-neighbourhoods*. London: Earthscan, 305 pp.

Barton, H., Grant, M. and Guise, R. 2003. *Shaping neighbourhoods: a guide for health, sustainability and vitality*. London: Spon, 244 pp.

Beatley, T. 2000. *Green Urbanism: Learning from European Cities*. Washington, D.C.: Island Press, 308 pp.

Benton-Short, L. and Short, J.R. 2008. *Cities and Nature*. New York: Routledge, 281 pp.

Calthorpe, P. 1993. *The Next American Metropolis: Ecology, Community and the American Dream*. New York: Princeton Architectural Press, 175 pp.

Chambers, N., Simmons, C. and Wackernagel, M. 2000. *Sharing Nature's Interest: Ecological Footprints as an Indicator of Sustainability*. London: Earthscan, 185 pp.

Duany, A., Speck, J., and Plater-Zyberk, E. 2000. *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. North Point Press, 304 pp.

European Conference of Ministers of Transport 1995. *Urban Travel and Sustainable Development*. Paris: Organization for Economic Co-operation and Development, 238 pp.

Friedman, A. 2002. *Planning the New Suburbia: Flexibility by Design*. Vancouver: UBC Press, 194 pp.

- Friedman, A. 2007. *Sustainable Residential Development: Planning and Design for Green Neighborhoods*. Maidenhead: McGraw-Hill Professional, 288 pp. [available electronically through the library web site]
- Hallsmith, G. 2003. *The Key to Sustainable Cities: Meeting Humans Needs Transforming Community Systems*. Gabriola Island, BC: New Society Publishers, 259 pp.
- Hough, M. 1995. *Cities and Natural Process*. New York: Routledge, 326 pp.
- Jacobs, J. 1961. *The Death and Life of Great American Cities*. New York: Random House, 458 pp.
- James, S. and Lahti, T. 2004. *The Natural Step for Communities: How Cities and Towns Can Change to Sustainable Practices*. Gabriola Island, BC: New Society Publishers, 279 pp.
- Kahn, M.E. 2006. *Green Cities: Urban Growth and the Environment*. Washington, D.C.: Brookings Institution Press. 160 pp.
- Maclaren, V. 1993. *Sustainable Urban Development in Canada: from Concept to Practice*. Toronto: ICURR Press.
- M'Gonigle, M. and Starke, J. 2006. *Planet U: Sustaining the World, Reinventing the University*, New Society Publishers: Gabriola Island, BC, 288 pages.
- Newman, P. and Kenworthy, J. 1999. *Overcoming Automobile Dependence*. Island Press, 450 pp.
- Newman, P. and Jennings, I. 2008. *Cities as Sustainable Ecosystems: Principles and Practices*. Washington, D.C.: Island Press, 284 pp.
- Northey, M.E. and McKibbin, J. 2002. *Making Sense: A Student's Guide to Research and Writing*, 4th Edition. Don Mills, Ont: Oxford University Press, 178 pp.
- Register, R. 1987. *Ecocity Berkeley: Building Cities for a Healthy Future*. North Atlantic Books, Berkeley, California, 140 pp.
- Register, R. 2006. *Ecocities: Rebuilding Cities in Balance with Nature*. Gabriola Island, BC: New Society Publishers, 373 pp.
- Roseland, M. and Connelly, S. 2005. *Toward Sustainable Communities: Resources for Citizens and their Governments*. Gabriola Island, BC: New Society Publishers, 239 pp. [available electronically through the library web site]
- Thomas, R. (editor) 2003. *Sustainable Urban Design: an Environmental Approach*. London: Spon, 212 pp.
- Wackernagel, M. and Rees, W. 1996. *Our Ecological Footprint: Reducing Human Impact on the Earth*. Gabriola Island, BC: New Society Publishers, 160 pp.
- White, R.R. 2002. *Building the Ecological City*. Cambridge, UK: Woodhead Publishing Ltd., 238 pp.
- Wilson, A. 2006. *Your Green Home: A Guide to Planning a Healthy, Environmentally Friendly New Home*. Gabriola Island, BC: New Society Publishers, 237 pp. [available electronically through the library web site]
- Williams, K., Burton, E., and Jenks, M. (editors) 2000. *Achieving Sustainable Urban Form*. London: Spon, 388 pp.

GEOG 4771 COURSE SCHEDULE (subject to changes) – Revised Aug 27th

Week of	Monday	Wednesday	Friday
Sept 9	(1) Course Introduction, Sustainability, Sustainability Criteria ³	(2) Green Building / LEED standards ³	Seminars and Class Project Overview, LEED Neighbourhood Development Ratings
Sept 16	(GPM²): Formulation of groups; discussion of study areas; hints & strategies, maps, fieldwork	(3) Sustainable Urban Development ³	1. Toronto's healthy house 2. Portland's urban growth boundary
Sept 23	3. Vanc's Livable Regions Strategy 4. Calthorpe's TOD model	(4) Sustainable Transportation ³	<i>To be announced ...</i>
Sept 30	(GPM²): Oral progress report; Intro to Smart Location & Linkage (SLL) section	5. Re-introduction of light rail / streetcars 6. Neighbourhood traffic calming	(5) Sustainable Energy Technologies ³
Oct 7	THANKSGIVING – no class	7. OPA-sponsored solar collection program 8. District heating	(6) Waste Management ³
Oct 14	(GPM²): Report on SLL section; Intro to Neighbourhood Pattern & Design (NPD) section;	9. Product design to reduce waste 10. Env'l impacts: disposable vs cloth diapers	(7) Water and Wastewater ³
Oct 21	11. John Todd's "Living Machine" 12. Removal of pollutants in stormwater	(8) Sustainable Agriculture / Landscaping ³	13. BC's Agricultural Land Reserve 14. Municipal street tree planting programs and benefits
Oct 28	(GPM²): Oral progress report or cont'd discussion of NPD;	Seminars (1, Sust. Urban Dev.)	Seminars (1, Sust. Urban Dev.)
Nov 4	(GPM²): Report on NPD section; Intro to Green Infrastructure & Building (GIS) section;	Seminars (1, Sust. Transpo.)	Seminars (1, Sust. Energy)
Nov 11	Seminars (1, Sust. Energy)	<i>To be announced ...</i>	Seminars (1, Sust Waste Management)
Nov 18	(GPM²): Report on GIB section; Intro to Green Infrastructure & Building (GIS) section;	Seminars (1, Water & Wastewater)	Seminars (1, Sust. Agriculture / Landscaping)
Nov 25	Seminars (1, Green Building / LEED Standards)	Seminars (1, Achieving Sustainability)	(GPM²): Final tabulations due; Expectations of final report;
Dec 2	(9) Achieving Sustainability ³	no class	no class

NOTES: (1) Shaded areas denote lecture time; (2) GPM refers to in-class meetings and presentations relating to the Group Project; (3) Consult readings on given topics assigned in class; (4) Thanksgiving holiday is Monday, Oct 8th, 2012; (5) First day of term: Mon. Sept 10th, 2012; Last day of classes is Mon. Dec. 3rd, 2012; (6) **Final exams** run from Dec 6th to 17th, 2012, inclusive – there is no flexibility in changing exams to accommodate holiday travel; (7) Final date to register for a course (Fri, Sept 21st);

Special Workshop of Interest: Friday, Nov 2nd: 1:30 to 3:00 **"Thinking Ahead to Grad School"** led by Dr. M. Dowsley for Geography 4011 but open to all interested students.