School of Planning, Faculty of Environment
University of Waterloo

GEMCC 652/PLAN 674

CLIMATE CHANGE AND COMMUNITY PLANNING

Winter 2019 (Annual Offering)
Location: On-Line
Days: Ongoing

Instructor: Mark Seasons PhD, FCIP, RPP
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Course Description:

Climate change has complex implications for communities across Canada. Planners are at the forefront of developing and implementing strategies to both reduce greenhouse gas (GHG) emissions, and build resilience to current and future climate. This course focuses on some of the opportunities and challenges associated with the integration of climate change into urban and rural planning, including climate vulnerability of urban systems, low-carbon transport systems, urban greening and green infrastructure for climate resilience, regenerative designs that reduce social vulnerability, the role of information and communication technologies for system efficiency and resilience, and assessing synergies and conflicts between mitigation and adaptation. Leading policy and design cases from communities across Canada and internationally will be examined.

Course Philosophy:

This course is designed to provide graduate Planning students with a solid understanding of the causes of climate change, and potential responses to the impacts of climate change in communities. The course is designed to provide foundation knowledge and skills that could be used when planning for, and adapting to, the community impacts of climate change.

Course Format:

The course comprises context-setting and informational lectures presented by the course instructor. Course participants will be expected to have read, and be prepared to discuss, assigned readings that will be drawn from web-based resources. Implications for community responses to climate change are to be explored at every opportunity.

Readings and resources:
Readings and resources that are assigned to support lectures will be posted for this course on the GEMCC 652/PLAN 674 Learn course website.

Course Structure:
Week 1
Theme: Community Planning: The Big Picture
Learning Outcomes: By the end of this week, you should be able to: Acquire a clear understanding of the context within which community planning takes place, and the challenges posed by climate change.
Content: In this inaugural session, we will review the objectives and structure of the course. We then turn to a discussion of the fundamentals about community planning. Topics to be covered include: the evolution of planning as a profession, key trends that affect planning, and the challenges posed by climate change when planning communities.

Week 2
Theme: Climate Change Fundamentals
Learning Outcomes: By the end of this week, you should be able to: Develop foundation knowledge about the science, causes and implications of climate change.
Content: In this week's content, we will briefly review the basics of the climate change phenomenon. This will include a discussion of trends and patterns. We then move on to the overall implications of climate change for communities and related planning challenges and responses.

Week 3
Theme: Operating Concepts
Learning Outcomes: By the end of this week, you should be able to: Develop a good understanding of several key terms and concepts that are used when discussing climate change.
Content: The objective is to help communities prepare for these anticipated impacts – to be precise, to mitigate or minimize negative impacts and to maximize potential positive impacts. Before we discuss planning strategies, we need to review some key concepts and operating terms: vulnerability, resilience, mitigation and adaptation.

Week 4
Theme: Institutional and Governance Framework
Learning Outcomes: By the end of this week, you should be able to: Gain a comprehensive understanding of the roles and responsibilities of levels of government when planning for, and managing, climate change impacts.
Content: Typically, the public sector is responsible for responses to the climate change phenomenon. In this week's content, we examine the kinds of interventions required by government in general, with attention to the roles, responsibilities and powers that are associated with local, provincial/state and federal governments.

Week 5
Theme: Climate change and the planning cycle
Learning Outcomes: By the end of this week, you should be able to: Be familiar with the key elements, stages and actors in the planning process for climate change.
Content: Planning for climate change is a responsibility shared by all levels of government. However, since the majority of impacts will be experienced in communities and regions, communities as a whole - including local government - will need to plan for climate change (i.e. land use, spatial planning, urban design, infrastructure, etc.). In this session, we review the climate change planning process and planning cycle, noting the kind of information that is required to make informed decisions and the actors involved in the climate change planning process.

Week 6
Theme: Community Planning Tools
Learning Outcomes: By the end of this week, you should be able to: Acquire a basic understanding of the types and variety of plan implementation tools that could be used when planning for climate change.
Content: Once a climate change plan has been developed, it needs to be implemented. At this stage, community planners can access and apply a variety of implementation tools. These can include policy tools (e.g. land use plans), statutory tools (e.g. zoning bylaws, design standards), green infrastructure, behavioural change (i.e. consumption patterns), and financial tools (e.g. incentives and/or disincentives).
Assignment #1 Due

Week 7
Theme: Climate Change Plan Implementation Strategies
Learning Outcomes: By the end of this week, you should be able to: Know what it takes to effectively implement a climate change plan.
Content: It is necessary, but not sufficient, to create a climate plan or strategy. To be effective and generate desired outcomes and impacts, the plan has to be implemented, and the tools must be used effectively and strategically. In this session, we consider the factors that can facilitate (or impede) successful implementation of these plans (e.g. political strategy, stakeholder support, etc.).

Week 8
Theme: Mitigation and Adaptation Strategies
Learning Outcomes: By the end of this week, you should be able to: Understand the factors that can facilitate or impede the application of adaptation strategies, and the opportunities presented for synergies with mitigation efforts.
Content:
Mitigation:
Communities must do what they can to temper the pace and extent of climate change. For example, how might we reduce GHG emissions through land use, building design, transportation system and infrastructure planning (e.g. mass transit, alternative travel modes)? Is it possible to reduce energy consumption, and thus the demand for coal-based fuels? How might urban tree planting projects help to cool cities? Can we increase our use of low-energy systems?

Adaptation:
Context is a critical determinant for adaptation strategies. This will require local government policies and projects that guide and control. The land use implications will include, for example, new forms of urban development (i.e. strategic intensification), infrastructure (i.e. green infrastructure), resource management strategies (i.e. water retention/drought management/flood control), and climate change appropriate urban design (i.e. vegetation plantings, low-energy building design, LEED standards).
Assignment #2 due

Week 9
Theme: Plan Monitoring and Evaluation
Learning Outcomes: By the end of this week, you should be able to: Acquire basic skills and knowledge about the monitoring and evaluation of climate change plans.
Content: Once the climate change plan is implemented, it is necessary to determine whether it has achieved the desired impacts and outcomes. The objective is to ensure the climate change plan is responsive and effective. This calls for regular monitoring and evaluation of the climate change plan's goals, objectives, policies and actions that could require reinforcement, and/or revision. This also calls for the development of indicators that provide useful information for plan monitoring and evaluation.

Week 10
Theme: Case Studies: Community Climate Change Adaptation Planning/Plans
Learning Outcomes: By the end of this week, you should be able to: Enhance your understanding of best practices in community climate change adaptation planning.
Content: Communities of all kinds – urban, rural, small town, Indigenous - will be adversely affected by the impacts of climate change. In this session, we review some of the high profile and common impacts of climate change. We then examine how communities have responded to the climate change challenge. Case studies from Canada and elsewhere are reviewed in this session.

Week 11
Theme: Towards an Implementable Climate Change Adaptation Plan
Learning Outcomes: By the end of this week, you should be able to: Understand how to a climate change plan/strategy that is implementable, effective, and has a reasonable chance of success.
Content: Communities, whether urban or rural/small town, will require expertise to create climate change plans. In this session, we review the fundamentals of climate change, and of best practices for planning for climate change. The characteristics of an effective climate change plan, and associated implementation strategy, will be reviewed.

Week 12
Theme: Team Presentations: Climate Change Adaptation Plan
Learning Outcomes: By the end of this week, you should be able to: Demonstrate a sound understanding of the process, content and implementation strategy considerations that, together, comprise an effective climate change adaptation strategy for a community.
Content: In this session, Project Teams will prepare and deliver a PowerPoint presentation that demonstrates the application of the knowledge acquired in this course to a real-world community. The product will be a climate change adaptation strategy/plan. The PPT presentation will provide an overview of the dynamics of climate change, common impacts, and then, with reference to a specific community, the Team's recommendations about a supportive planning process and policy recommendations.
Assignment #3 Due

NOTE:
Details about Primary and Supplementary Resources that support the content in each Week are available on the Course Learn site.

Course Requirements and Evaluation Criteria:

Asst. #	Subject	Assignment Objectives
1.	**The basics of climate change** **Individual Assignment Value:** 20%	The objective for this paper is to demonstrate your understanding of the climate change phenomenon. The paper should cover elements such as the terms and concepts that are commonly used; the science of climate change; and common issues and impacts that are associated with climate change. The paper is to follow APA referencing protocols, 3000 words in length, 1.5 line spacing.
2.	**Plan development and implementation** **Individual Assignment Value:** 20%	The objective for this paper is to demonstrate your understanding of best practices in climate change plan development and implementation. This assignment builds on the key content generated for Assignment #1. The paper is to follow APA referencing protocols, 3000 words in length, 1.5 line spacing.
3.	**A climate change plan for a real-world community** **Team Project Value:** 30% Report 10% Presentation	Team Project. This assignment has two elements. (1) The Project Team will prepare a climate change plan for a real-world community that does not yet have a plan in place. The Team must demonstrate its understanding of (a) the climate change phenomenon; (b) community-based impacts; (c) the climate change planning process; and (d) plan implementation and evaluation. The plan is to be professional quality in style and content. The report is to follow APA referencing protocols, and have 1.5 line spacing with a maximum length of 5,000 words (excluding footnotes, appendices, graphics, and list of references). (2) The Project Team will prepare and deliver a 20-minute PowerPoint presentation, followed by a 10-minute Q+A session.
4.	**Discussions** 20%	There are four on-line, inter-active discussion sessions scheduled throughout this course. All course participants are expected to contribute ideas and comments about the designated discussion topics. Each discussion segment is worth 5% of the course grade.
	100%	Guidelines will be available for each Assignment

Important Course/University Policies:

Grade Penalties and Special Considerations:

Lateness penalty

Papers are due on the date set. The Turnitin system will determine the submission date and time. A 5% penalty deducted from the value of the assignment is assessed for each additional late day.

Requests for exemptions or compassionate considerations

These are to be discussed with the course instructor.

Turnitin

Plagiarism detection software (Turnitin) will be used to screen assignments in this course. This is being done to verify that use of all materials and sources in assignments is documented. Students can use Turnitin to screen for possible plagiarism issues with their draft work and final papers. Students will be given an option if they do not want to have their assignment screened by Turnitin. In the first week of the term, details will be provided about arrangements and alternatives for the use of Turnitin in this course.

Communication

Students' UW email accounts will be used for communication outside of lectures. Course materials will be available on 'Learn'. Students are responsible to check their UW email and 'Learn' accounts regularly. An effort will be made to deal with email requests within three days of receipt. The instructor may respond to email outside of regular working hours (M-F ~8AM-6PM).

Referencing and Citation

The School of Planning uses the APA (American Psychological Association) citation style as a standard referencing system. The APA style is described in the *Publication Manual of the American Psychological Association* (call number BF76.7.P83 2001). You can find APA guidelines at: http://www.apastyle.org/

Note for Students with Disabilities

AccessAbility Services, located in Needles Hall (Room 1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term. See: https://uwaterloo.ca/disability-services/

Mental Health
The University of Waterloo, the Faculty of Environment, the School of Planning and your instructors and Teaching Assistants consider students' well-being to be extremely important. We recognize that throughout the term students may face health challenges - physical and / or emotional. **Please note that help is available.**

Mental health is a serious issue for everyone and can affect your ability to do your best work. Counseling Services (www.uwaterloo.ca/counselling-services) is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counseling for a variety of areas including anxiety, stress management, depression, grief, substance use, sexuality, relationship issues, and much more.

For emergencies, contact the mobile crisis team (available 24 hrs./day) at 519-744-1813 or UW police at 519-888-4911.

Religious Observances
Please inform the instructor at the beginning of term if special accommodation is needed for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

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. ENV students are strongly encouraged to review the material provided by the university's Academic Integrity office (See:
http://uwaterloo.ca/academicintegrity/Students/index.html

Consequences of Academic Offences
A student is expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Graduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline.

For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline. See:
http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm
Within ENV, those committing academic offences (e.g. cheating, plagiarism) will be placed on disciplinary probation and will be subject to penalties which may include a grade of 0 on affected course elements, 0 on the course, suspension, and expulsion.

Research Ethics
Please also note that the University of Waterloo requires all research conducted by its students, staff, and faculty which involves humans as participants to undergo prior ethics review and clearance through the Director, Office of Research Ethics. The ethics review and clearance processes are intended to ensure that projects comply with the Office's Guidelines for Research with Human Participants, as well as those of provincial and federal agencies, and that the safety, rights and welfare of participants are adequately protected. The Guidelines inform researchers about ethical issues and procedures which are of concern when conducting research with humans (e.g. confidentiality, risks and benefits, informed consent process, etc.). If the development of your research proposal consists of research that involves humans as participants, then please contact the course instructor for guidance. See: https://uwaterloo.ca/research/office-research-ethics

Discipline
A student is expected to know what constitutes academic integrity, to avoid committing academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Graduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline. See: www.adm.uwaterloo.ca/infosec/Policies/policy71.htm
For typical penalties, check Guidelines for Assessment of Penalties. See: www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm

Grievance
Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy #70, Student Grievance. See: http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm

Appeals
A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals). See: https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-72

Resources:
Week 1 – Community Planning: The Big Picture

Hodge, G. and Gordon, D. (2014). *Planning Canadian Communities. 6th edition*. Toronto: Nelson. 3-18 ISBN-13: 978-0-17-650982-8 461 pages

Thomas, R. (2016). An Introduction to Canadian Planning. In Thomas, R. (ed.). *Planning Canada: A Case Study Approach*. Toronto: Oxford University Press. 2-46 ISBN: 978-0-19-900807-0 439 pages

Davoudi, S., Crawford, J. and Mehmood, A. (eds.). (2009). *Planning for Climate Change: Strategies for Mitigation and Adaptation for Spatial Planners*. New York: Earthscan ISBN: 978-1-138-97852-2 319 pages

Wilson, E. and Piper, J. (2010). *Spatial Planning and Climate Change*. New York: Routledge ISBN: 978-0-415-49591-2 445 pages

Week 2 – Climate Change Fundamentals

Blake, R., Grimm, A., Ichinose T., Horon, R., Gaffin, S., Jiong, S., Bader, D., and Cecil, L. (2011). Chapter 3. Urban climate: processes, trends and projections. In *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network (ARC3)*. Retrieved from the world wide web on January 6, 2018: http://uccrn.org/files/2014/02/ARC3-Chapter-3.pdf

Burkett et al. (2014). Chapter 1: Point of Departure. In *Climate change 2014: Impacts, Adaptation and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. New York: Cambridge University Press. Retrieved from the world wide web on August 31, 2017: https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf

Caldwell, W. (ed.). (2015). *Planning for Urban Resilience: Coping with Climate Change and Energy Futures*. Winnipeg: University of Manitoba Press

Canada. (n.d.). *Greenhouse effect*. Retrieved from the world wide web on August 31, 2017: https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-effect.html

Climate-ADAPT. (n.d.). *European Climate Adaptation Platform*. Environment Canada. Retrieved from the world wide web on August 31, 2017: http://climate adapt.eea.europa.eu/help/glossary/index_html/#linkClimate

Davoudi, S., Crawford, J. and Mehmood, A. (2010). Climate change and spatial planning responses. In Davoudi, S., Crawford, J. and Mehmood, A. (eds.). *Planning for climate change: Strategies for mitigation and adaptation for spatial planners*. New York: Earthscan 7-15

IPCC. (2014). *Climate Change 2014: Synthesis Report Summary for Policymakers*. Retrieved from the world wide web on August 31, 2017: https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf

NASA. (2005). *What's the difference between weather and climate?* Retrieved from the world wide web on August 31, 2017: https://www.nasa.gov/mission_pages/noaa-n/climate/climate_weather.html

UN-Habitat. (2014). *Planning for climate change: A strategic, values-based approach for urban planners*. Nairobi, Kenya: United Nations Human Settlements Programme

Wilson, E. and Piper, J. (2010). *Spatial Planning and Climate Change*. New York: Routledge ISBN: 978-0-415-49591-2 445 pages

Week 3 – Operating Concepts

Black, R., Bruce, J. & Egener, I. (2010). *Adapting to climate change: a risk-based guide for local governments*. Ottawa, ON: Federation of Canadian Municipalities. Retrieved from the world wide web on January 5, 2017: https://fcm.ca/Documents/tools/PCP/Adapting_to_Climate_Change_a_Risk_Based_Guide_for_Local_Governments_EN.pdf

Canada. (2016). *Adapting to climate change in Canada*. Ottawa, ON: Government of Canada. Retrieved from the world wide web on January 5, 2018: https://www.canada.ca/en/environment-climate-change/services/climate-change/adapting-climate-change.html

City of Barrie. (2017). *Climate Change Adaptation Plan 2017*. Barrie, ON: City of Barrie. Retrieved from the world wide web on January5, 2018: https://www.barrie.ca/Living/Environment/Conservation/Documents/Barrie-Climate-Change-Adaptation-Strategy.pdf

International Strategy for Disaster Reduction. (2009). *Terminology on disaster reduction*. Geneva, Switzerland: United Nations. Retrieved from the world wide web on January 5, 2018: http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf

OECD. (2017). *Adaptation to climate change*. Paris: OECD. Retrieved from the world wide web on January 5, 2018: http://www.oecd.org/env/cc/adaptation.htm

Shreve, G., Manez Costa, M. & Kelman, I. (2014). *Consideration of scale and scaling for vulnerability and adaptation studies in the water sector: case studies in four geographies.* Report 21, Climate Services Center, Germany. Retrieved from the world wide web on January 5, 2018: http://www.climate-service-center.de/imperia/md/content/csc/report_21.pdf

Toronto and Region Conservation Authority. (n.d.). *Climate change mitigation: a strategic approach for cities*. Toronto: TRCA. Retrieved from the world wide web on January 5, 2017: http://trca.on.ca/dotAsset/81363.pdf

Richardson, G.R.A. and Otero, J. (2012). *Land use planning tools for local adaptation to climate change*. Ottawa, Ont.: Government of Canada. Retrieved from the world wide web on January 5, 2017: http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/files/landuse-e.pdf

Week 4 – Institutional and Governance Framework

Canada. (n.d.). *The Canadian Constitution*. Ottawa, ON: Department of Justice. Retrieved from the world wide web on January 7, 2018: http://www.justice.gc.ca/eng/csj-sjc/just/05.html

Commonwealth Local Government Forum. (n.d.). *The local government system in Canada*. Retrieved from the world wide web on January 7, 2018: http://www.clgf.org.uk/default/assets/File/Country_profiles/Canada.pdf

OECD. (2017). *The governance of land use*. Paris: OECD. Retrieved from the world wide web on January 6, 2018: https://www.oecd.org/cfe/regional-policy/governance-of-land-use-policy-highlights.pdf

Lightbody, J. (2006). *City Politics, Canada*. Peterborough, ON; Broadview press

Sancton, A. (2015). *Canadian Local Government: An Urban Perspective*. Second edition. Toronto: Oxford University Press

Taylor, Z. and Bradford, N. (2015). The New Localism: Canadian Urban Governance in the Twenty-First century. In Filion, P., Moos, M., Vinodrai, T. and Walker, R. (eds.). *Canadian Cities in Transition: Perspectives for an Urban Age. Fifth edition*. Toronto: Oxford University Press 194-208

Federation of Canadian Municipalities. (n.d.). *Alternative funding mechanisms*. Retrieved from the world wide web on January 7, 2018: https://fcm.ca/home/programs/partners-for-climate-protection/alternative-financing-mechanisms.htm

Week 5 – Climate Change and the Planning Cycle

Berke, P. and Stevens, M. (2016). *Land use planning for climate adaptation: Theory and practice*. Journal of Planning Education and Research. 36(3): 283-289

Bizikova, L., Neale, T. and Burton, I. (2008). *Canadian Communities Guidebook for Adaptation to Climate Change*. Ottawa: Federation of Canadian Municipalities. Retrieved from the world wide web on September 29, 2017: https://fcm.ca/Documents/tools/PCP/canadian_communities_guidebook_for_adaptation_to_climate_change_EN.pdf

Bowron, B. and Davidson, G. (2011). *Climate change adaptation: A handbook for small Canadian communities*. Ottawa: Canadian Institute of Planners. Retrieved from the world wide web on September 29, 2017: https://www.cip-icu.ca/Files/Resources/RURAL-HANDBOOK-FINAL-COPY

Davoudi, S., Crwaford, J. and Mehmood, A. (2015). *Planning for climate change: Strategies for mitigation and adaptation for spatial planners*. New York: Earthscan

Gladki Planning Associates. (n.d.). *Model Standard of Practice for Climate Change Planning*. Ottawa: Canadian Institute of Planning. Retrieved from the world wide web on September 29, 2017: https://www.cip-icu.ca/Files/Resources/CIP-STANDARD-OF-PRACTICE-ENGLISH.aspx

Graham, D.A. (2014). Rumsfeld's Knowns and Unknowns: The Intellectual History of a Quip. *The Atlantic*. March 27, 2014. Retrieved from the world wide web on September 28, 2017: https://www.theatlantic.com/politics/archive/2014/03/rumsfelds-knowns-and-unknowns-the-intellectual-history-of-a-quip/359719/

Hill, S. and Perun, M. (2017). *Planning for climate change in Mid-Sized Ontario Cities*. Toronto: Evergreen. Retrieved from the world wide web on September 29, 2017: https://www.evergreen.ca/downloads/pdfs/2017/11_MSC_RC_Hill_and_Perun.pdf

ICLEI Canada. (n.d.). *Changing Climate, Changing Communities: Guide and Workbook for Municipal Climate Adaptation*. Toronto: ICLEI Canada. Retrieved from the world wide web on September 29, 2017: http://icleicanada.org/images/icleicanada/pdfs/changing_climage_changing_communities.pdf

Rittel, H. and Webber, M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*. 4: 155-169

Sheppard, S., Shaw, A., Flanders, D., Burch, S., Wierk, A., Carmichael, J., Robinson, J. ands Cohen, S. (2011). Future visioning for climate change: A framework for community engagement and planning with scenarios and visualization. *Futures*. 43(4): 400-412

UN Habitat. (2014). *Planning for climate change: A strategic, values-based approach for urban planners*. Nairobi, Kenya: UN-Habitat

Week 6 – Community Planning Tools

Bizikova, L., Neale, T. and Burton, I. (2008). *Canadian Communities Guidebook for Adaptation to Climate Change*. Ottawa: Federation of Canadian Municipalities. Retrieved from the world wide web on September 29, 2017: https://fcm.ca/Documents/tools/PCP/canadian_communities_guidebook_for_adaptation_to_climate_change_EN.pdf

C40 Cities. (n.d.). *Climate action for URBan sustainability (CURB) scenario planning tool*. Retrieved from the world wide web on January 6, 2018: http://www.c40.org/programmes/climate-action-for-urban-sustainability-curb

Canada. (2012). *Land use planning tools for local adaptation to climate change*. Ottawa: Natural Resources Canada. Retrieved from the world wide web on January 6, 2018: http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/files/landuse-e.pdf

Canada Green Building Council. (n.d.). *Green building toolkit: a guide to sustainable communities*. Retrieved from the world wide web on January 6, 2017: https://www.cagbc.org/CAGBC/Advocacy/Green_Building_Toolkit/CAGBC/Advocacy/Green_Building_Toolkit.aspx?hkey=f413d2b1-a706-433b-b872-ad627e730fdb

Environmental and Energy Study Institute. (n.d.). *Support for climate change resiliency*. Retrieved from the world wide web on January 6, 2018: http://www.eesi.org/policy/resiliency

Henstra, D. and Thistlethwaite, J. (2017). Municipal flood risk sharing in Canada: a policy instrument analysis. *Canadian Water Resources Journal*. 42(4), 349-363

Ontario. (n.d.). *Planning for climate change*. Toronto: Ministry of Municipal Affairs/Ministry of Housing. Retrieved from the world wide web on January 6, 2018: http://www.mah.gov.on.ca/Page6857.aspx

OECD. (2017). *The governance of land use*. Paris: OECD. Retrieved from the world wide web on January 6, 2018: https://www.oecd.org/cfe/regional-policy/governance-of-land-use-policy-highlights.pdf

U.S Department of Energy. (n.d.). *Going beyond code: a guide to creating effective green building programs for energy efficient and sustainable communities*. Washington, DC: Department of Energy. Retrieved from the world wide web on January 6, 2018: https://www.energycodes.gov/sites/default/files/documents/GoingBeyondCode.pdf

Week 7 – Climate change plan implementation strategies

Bassett, E. and Shandas, V. (2010). Innovation and climate action planning: perspectives from municipal plans. *Journal of the American Planning Association*. 76(4), 435-450

City of Kelowna. (2012). *Community Climate Action Plan*. Kelowna, BC: Policy and Planning Department, City of Kelowna. Retrieved from the world wide web on January 6, 2018: https://www.kelowna.ca/sites/files/1/docs/2012-06-12_climate_action_plan_final_public_version_reduced.pdf

City of Toronto. (n.d.). *Climate change adaptation: towards a resilient city*. Retrieved from the world wide web on January 6, 2018: https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=78cfa84c9f6e1410VgnVCM10000071d60f89RCRD

Climate Policy Info Hub. (n.d.). *Climate change adaptation: needs, barriers and limits*. Retrieved from the world wide web on January 6, 2018: http://climatepolicyinfohub.eu/climate-change-adaptation-needs-barriers-and-limits

Moser, S. and Ekstrom, J. (2010). A framework to diagnose barriers to climate change adaptation. *Proceedings of the National Academy of Sciences*. 107(51): 22026-22031

National Research Council. (2010). Advancing the science of climate change. *The National Academies Press*. Retrieved from the world wide web on January 6, 2018: https://www.nap.edu/read/12782/chapter/8

Corff-Morlot, J., Kamal-Chaoui, L., Donovan, M., Cochran, I. Robert, A. and Teasdale, P. (2009). *Cities, climate change and multi-level governance*. Paris: OECD. (2009). Retrieved from the world wide web on January 6, 2018: https://www.oecd.org/governance/regional-policy/44232263.pdf

McCarney, P., Blanco, H., Carmin, J. and Colley, M. (2011). Chapter 9: Cities and climate change – the challenges for governance. In *Climate Change and Cities: First Assessment Reoport of the Urban Climate Change Research Network (ARC3).* Retrieved from the world wide web on January 6, 2018: http://uccrn.org/files/2014/02/ARC3-Chapter-9.pdf

Week 8 – Mitigation and Adaptation strategies

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Week 9 – Plan Monitoring and Evaluation

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Week 10 – Case Studies; climate change adaptation

See Course Learn site for this information.

Week 11 – Towards an implementable plan

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Week 12 – Team Presentations: Climate change plan
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January 2019