

International Relations 4701 Canada and Climate Change Security

Instructor Information:

Tom Deligiannis
Department of Political Science
Phone: 519-661-2111, ext. 80996
Email: tdeligia@uwo.ca
Skype Name: tom.deligiannis2
Office Room Number: SSC 4134
Office Hours (Term 2): Thursdays, 3:30-5pm, or by appointment, Skype, phone, etc.

Class Information:

Thursdays, 1:30-3:30pm, KB – K208 (Kresge Building)

Course Description:

“Planet Earth, creation, the world in which civilization developed, the world with climate patterns that we know and stable shorelines, is in imminent peril. The urgency of the situation crystallized only in the past few years. We now have clear evidence of the crisis, provided by increasingly detailed information about how Earth responded to perturbing forces during its history (very sensitively, with some lag caused by the inertia of massive oceans) and by observations of changes that are beginning to occur around the globe in response to ongoing climate change. The startling conclusion is that continued exploitation of all fossil fuels on Earth threatens not only the other millions of species on the planet but also the survival of humanity itself— and the timetable is shorter than we thought.”

Dr. James Hansen, Adjunct Professor at the Department of Earth and Environmental Sciences at Columbia University and at Columbia’s Earth Institute, and Director of the NASA Goddard Institute for Space Studies.

“We all know about climate change and we’re very curious about the consequences for Canada, but we’ve not seen any concrete analysis of the potential implications for Canada. Here at CSIS, we’re focused on shorter term priorities, so it’s hard for us to study the long-term implications of climate change.”

Paraphrased quote from conversation with anonymous CSIS official, Aug. 2012.

Climate change has the potential to radically transform the lives of humans on this planet over the coming decades. The implications for Canadians and for Canada as a state are only beginning to be understood. Since the 2007 report of the UN Intergovernmental Panel on Climate Change (IPCC), we have clear evidence of both the extent that human action

has had in warming the planet, and we have a range of projections for how the earth's climate will warm over the coming century. Scientists have also begun the process of carefully outlining the consequences of climate change for different regions, because the implications of warming are expressed in different ways in different places. At the national level, some have also begun the process of envisioning the implications for social and institutional adaptation to an increasingly warm planet.

Adaptation to climate change is clearly dependent on the degree of warming that the planet will experience. We are still in the early stages of seeing the impacts of warming on the earth. Levels of CO₂ in the atmosphere are currently not much higher than pre-industrial levels. If efforts are mobilized in the next decade or so we may be able to mitigate the impacts of climate change by sufficiently curbing our emissions of greenhouse gases to keep the impacts of climate change to a moderate and manageable level both in Canada and overseas.

However, the past decade of efforts to find a global solution to climate change do not offer reassurance that humanity is prepared to put aside self-interest anytime soon and come up with a lasting and significant agreement to mitigate the release of greenhouse gases. Events since 2008, in particular the failure of the 2009 Copenhagen meeting, to create a binding international agreement on mitigating climate change and the more recent failures of the RIO+20 conference to advance a global environmental agenda suggest that international efforts at mitigation are largely moribund. In spite of agreements in Copenhagen by the G8/G20 to limit global warming to 2 degrees above pre-industrial levels, little progress has been made in slowing, let alone reversing greenhouse gas emissions, particularly CO₂ emissions. The current level of CO₂ in the atmosphere is 394.49 parts per million (ppm).¹ From 2002 to 2011, the annual average increase in CO₂ levels was 2.07 ppm. This is up from the average annual increase of 1.6 ppm during the period from 1992-2001. Emissions levels are not leveling off and holding to a safe concentration of around 350-400ppm. Instead, we are rapidly adding to our emissions burden and entering the realm of pessimistic or business-as-usual forecasts of greenhouse gases. Self-interest, inertia in the social and economic system that we have created, and the sheer scale of the necessary change required instead suggest that pessimistic forecasts of future emission levels are where humanity is headed. What does this mean for Canada?

Understanding the implications of an ever-warming world for Canadian foreign policy and security concerns. We are going to survey the range of scientific literature to deeply understand the consequences of climate change both here at home and overseas, and then zoom in to determine the security and foreign policy implications for Canada if humanity continues down the path of business as usual emissions of greenhouse gases in the coming decades. This course will challenge students to bring to the table their understanding of the state and nature of international relations over the past century to envision credible and defensible implications of climate change for Canada, to highlight priorities for action by the Federal government, pinpoint and develop policy guidelines for future government foreign and security action, and provide guidance for government resource allocation. These are

¹ <http://co2now.org/>, accessed 2 Sept., 2012.

substantial challenges, particularly given the significant unknowns and possible non-linear impacts of climate change. However, these are the challenges this generation of students will have to confront over the course of their working life. It is thus crucial that students begin thinking about how Canada will respond in the coming decades.

Term 1 will begin with an examination of the science of climate change and the consequences of global warming for Canada and the world. We will then examine the consequent implications of climate change for human and national security globally, with a special focus on how these global consequences will impact Canada, its people, and its interests. These efforts will prepare the class for more detailed efforts to map out a specific dimension of the foreign policy and security implications of climate change for Canada in a major 50-60 page group report in term 2. This report will aspire to a high standard of scholarly and policy quality, and will be presented to an invited panel of outside experts at the end of term 2.

Learning Outcomes:

By the end of the course, students will have:

A clear understanding of the science of climate change, and the consequent implications of global warming for Canada and the world.

A clear understanding of different global warming scenarios, depending upon the course of action that humanity takes to address climate change in the coming decade.

A detailed understanding of the human and national security implications of climate change, at various scales, for Canada over the coming decades.

Grading:

This course requires the active participation of students each week. In term one, we will be working to understand the science and consequences of global warming for Canada and for human security generally. Students are expected to closely read each week's required readings and come to class prepared to engage their peers. Small group presentations in term 1 will focus on broad issues of climate change security. From these presentations, group members will draft background papers that more deeply examine the human security and foreign policy dimensions of their focus, and its importance to Canada in coming decades.

Through collaborative, student-driven decision making, the class will decide on the key foreign policy and security implications for Canada by the start of term 2 which will then be the subject for more intense examination in term 2 and the main subject of the group report.

| | | | |
|----------------------------|-----|------------------------|-----|
| Term 1: | | Term 2: | |
| Participation: | 15% | Participation: | 20% |
| Presentation: | 5% | Major Group Paper: 30% | |
| Background Research Paper: | 20% | | |
| Focus Memo: | 5% | Reflection Paper: | 5% |

Description of Graded Items

Participation Term 1 and 2: Participation is an assessment of how effectively a student has contributed to class discussions and in the efforts to craft the final group report and presentation. This course demands exceptional attendance and participation by every student. Students are expected to critically read and assess weekly readings, to come to class prepared to engage their peers on the issues at hand, and to actively engage their peers during the student group presentations. The final report project is a student driven exercise, demanding an active role by students to form the direction and parameters of the final report.

Term 1 Presentation: Starting in October, small groups of students will conduct weekly presentations on various dimensions of how climate change impacts human security, both globally and for Canada. A list of themes will be made available by the instructor, which corresponds to classes 6-13. Students can also petition the instructor to develop and examine a theme of their own choosing. Groups will lead the class in discussions of key issues and their implications for Canada following their presentations. The assigned readings for that week form the basis for discussions and the group presentation; however, groups are expected to go beyond these required readings in preparing for the class. The rest of the class should come to the presentations having read at least the required readings, and any additional readings suggested by group members. The presentation is free to use visual presentation software like Powerpoint or Prezi. A two page summary of key presentation points will be provided by the group to all students before the presentation. Presentations must be no longer than 30 minutes, to ensure plenty of time for class discussion of the issues. Marks assigned will reflect the quality of the presentation generally, but will also contain a 'peer assessment' component. The aggregate grade will be constituted in equal measures of a grade assigned by the instructor and a grade assigned by peers.

The theme chosen by students for their group presentation will form the background for their term 1 research paper.

Background Research Paper: Each student will produce a background research paper of approximately 18-20 pages on a key dimension of their group presentation. Groups will decide on their specific focus in consultation with their group members and the instructor. Each group member's paper will examine a different but related aspect of the theme under discussion.

These background papers will identify the key questions and implications of climate change security generally, and outline more specifically the likely policy and security implications for Canada. The background papers will concentrate and direct student efforts with the result that by the end of term 1, students will develop narrow areas of expertise that will feed into the discussions for term 2's group project. **Due on Nov. 29th**, last day of classes. Papers will be posted on OWL so that students can read the entire selection of background papers over the holidays.

Focus Memo: At the start of term 2, students will submit a 2 page focus memo to the instructor that lays out their view of a rationale and focus for the group project report in term 2. This memo will be the end product of the briefing and presentation process of term 1. Having heard the presentations in term 1, students will have an opportunity to present a rationale for the focus of the major group report in term 2. The instructor will distribute these memos to all the students in the class to read before attending the first class in term 2 as background preparation for visioning exercise for the term 2 group report. Additional specific details will follow for the memo. **Due Jan. 7th** – a few days before our first class so that they can be posted on OWL for everyone to read ahead of our first meeting on Jan. 10th

Term 2 Group Report: Term 2 will be taken up with the planning and preparation of a group report on a specific dimension(s) of the security and policy implications of climate change for Canada. Due to the size of the class, the instructor may decide to divide the class into two groups, to prepare two separate final reports. The group report will be a student-driven effort, where students decide on the final theme(s) to be addressed, with the guidance and input of the instructor. A final research report (possibly 2) between 50-60 pages long will be prepared. This report will be presented to an invited panel of experts at the end of term 2. The group report preparation includes the preparation of the final presentation for the invited experts, which in the past has taken the form of a Power Point or Prezi presentation.

Reflection Paper: Group projects are inherently difficult. Sometimes personal views and perspectives are lost in the effort to find consensus. The 2 page reflection paper gives students an opportunity to critically comment on the final report: to highlight aspects that they felt needed more emphasis; to offer opinions on direction, scope, etc. The reflection paper is **due on the last day of class, April 11th**.

Late Penalty: 5% per day, including weekends.

Texts:

There are two required texts for this course, available for purchase in the Western bookstore. Copies of each required text are also available for 2-hour loan from Weldon library. The other required readings for this course consist of journal articles, book chapters, or gray literature reports, and will be available to students through the class OWL page.

Required Texts:

David Archer, *Global Warming: Understanding the Forecast* (Hoboken, NJ: John Wiley and Sons Inc., 2012).

Christian Webersik, *Climate Change and Security: A Gathering Storm of Global Challenges* (Denver, CO: Praeger, 2010).

Supplementary readings may be noted below for various sessions. These are not required for each week, but students are encouraged to examine them if they have time. They may also serve as a good starting point for the group presentation and background research paper.

Course Outline with Reading Schedule

1. Sep 6 – Course Introduction

2. Sep 13 – Global Warming Science and the Forecast for the Future

This week we survey the science on global warming and examine in detail the evidence of current warming and projections for future warming. As well, we survey the potential climate impacts of global warming. There's a fair amount of science discussed in this session's readings, but students need to have a firm grasp of the mechanisms at work and the details of forecasts of global warming and its impacts. Students should try to clarify the impacts of climate change in different regions, get some idea of the scale of impacts, and clarify the likely warming scenarios for the future.

Required Readings:

Archer, David. *Global Warming: Understanding the Forecast* (Hoboken, NJ: John Wiley and Sons Inc., 2012): Skim pp. 1-132; carefully read pp. 133-172 on the forecast and projected impacts.

3. Sep 20 – Human Security and Climate Change

What are the links between human induced environmental change and security? How has this traditionally been dealt with by those who think about security concerns? How has our concept of security changed and how has this changed the way we think about environmental challenges? Does it make sense to think of environmental challenges through a security lens? Does doing this add anything to our ability to plan for future challenges? These are a few of the questions that arise in this week's overview of the links between climate change and security.

Required Readings:

Webersik, Christian. *Climate Change and Security: A Gathering Storm of Global Challenges* (Denver, CO: Praeger, 2010): Chapter 1, pp. 1-20.

Dalby, Simon. *Security and Environmental Change* (Malden, MA: Polity Press, 2009): Introduction: pp. 1-12; Chapters 4-6, pp. 78-158.

Supplementary Reading:

IPCC, Working Group 2, Assessment Report 5, "Human Security," Draft Chapter 12, 11 June 2012. 52 pages.

4. Sept. 27th – Canada, Climate Change, and Security

How is climate change going to impact Canada? What will be the impacts? How severe will they be? What are the challenges that society and government will have to face? This session gives an overview of the possible domestic consequences of climate change and an overview of the key challenges Canadians and their government will have to confront.

Required Readings:

National Round Table on the Environment and the Economy, *Degrees of Change: Climate Warming and the Stakes for Canada* (Ottawa: NRTEE: 2009).

McBean, Gordon. *The Security of Canada and Canadians – Implications of Climate Change* (London: UWO/Social Sciences and Humanities Research Council, 2009): Preface, pp. i-xxxvii.

Drexhage, John and Deborah Murphy. *Climate Change and Foreign Policy in Canada: Intersection and Influence* (Toronto: Canadian International Council, 2010).

5. Oct 4th Forecasting, Risk Assessment, and Scenario Building

What are the likely outcomes or scenarios that scientists and scholars use to think about the impact of climate change in the future? How do they come to develop these scenarios? What assumptions underlay these scenarios and how credible are these assumptions? Which scenarios and assumptions about how climate change and human action will unfold do you find most convincing? This week we focus on these scenarios, disentangle their assumptions, and reflectively examine the process of creating scenarios about the future for climate change and human security.

Required Readings:

Wack, Pierre. "Scenarios: Uncharted Waters Ahead." *Harvard Business Review*. 63(5) 1985: pp. 73-89.

Wack, Pierre. "Scenarios: Shooting the Rapids." *Harvard Business Review*. 63(6) 1985: pp. 139-50.

Maas et al., *Shifting Bases, Shifting Perils A Scoping Study on Security Implications of Climate Change in the OSCE Region* (Berlin, Adelphi: 2010).

Intergovernmental Panel on Climate Change. *Special Report on Emissions Scenarios, Summary for Policy Makers, Working Group III, International Panel on Climate Change* (Cambridge, Cambridge U. P.: 2000).

Student Presentations Begin

6. Oct 11th – Climate Change and Arctic Security

Canada is a northern country – and we're not talking about the narrow strip of land that sits on the northern border of the US where the vast majority of Canadians live. We're talking about the huge expanse of land, lakes, rivers, and ice that sits north of the 60th parallel, the divider between the provinces and territories in western Canada and the Arctic zones of Quebec and Labrador. More than 40% of Canada's land mass sits 'north of 60'. What are the implications of climate change for the Arctic generally and for Arctic Canada in particular? What challenges will Canada have to face in the coming decades in the Arctic? How will Arctic change generally impact the northern hemisphere and international relations in the Arctic? This session begins to examine some of these issues and begins to address the implications for Canada.

Required Readings:

Arctic Climate Impact Assessment, *Impacts of a Warming Arctic* (Cambridge: Cambridge U.P., 2004): Executive Summary (26 pages).

Paskal, Cleo. *Global Warring: How Environmental, Economic, and Political Crises will Redraw the World Map* (Toronto: Key Porter Books, 2010): Part 2, pp. 74-133.

Huebert, Rob., H. Exner-Pirot, A. Lajeunesse, J. Gullledge. Climate change & international security: The Arctic as a Bellwether. (Arlington, Virginia: Center for Climate and Energy Solutions 2012). Available at:
<http://www.c2es.org/publications/climate-change-international-arctic-security/>

Griffiths, Franklin. *Toward a Canadian Arctic Strategy* (Toronto: Canadian International Council, 2009).

Supplementary Readings:

Huebert, Rob. *The Newly Emerging Arctic Security Environment* (Calgary: Canadian Defence and Foreign Affairs Institute, 2010).

See essays on Canada and Arctic security in the special issue of *International Journal*, 65(4), Autumn 2010.

7. Oct 18th – Climate Change, Environmental Change, and Water Security

Sessions 7 and 8 explore closely related dimensions of climate change and their impacts. Water is crucial to food production, and climate change induced changes in precipitation may have major influences on global food security and Canada's position as a global food producer. In many ways it makes sense to study the climate change implications on water and food together. The subject is tremendously complex, however. For analytical simplicity, we divide the focus on water and food into two sessions, recognizing the inherent relationships between sessions. The consequences of precipitation changes, impacts of ice sheet melting, questions of shared rivers and water bodies between states and within state jurisdictions, and even the fundamental question of whether water should continue to commoditize water or declare water a universal right, will be part of this week's session. In many ways, these are the fundamental dimensions of high and low politics around water, and we seek to understand how climate change will impact these dynamics.

Required Readings:

Wolf, Aaron. "Shared Waters: Conflict and Cooperation." *Annual Review of Environment and Resources* 32 (2007): 241–69.

Dinar, A., Dinar, S., McCaffrey, S., and McKinney, D. *Bridges Over Water: Understanding Transboundary Water Conflict, Negotiation and Cooperation* (Hackensack N.J.: World Scientific Publishing Company, 2007): Chapter 1, "Introduction : State of Water and Interstate Water Relations" pp. 1-24; Chapter

7, “Hydropolitics and International Relations” pp. 138-159.

Vivekanandan J. and Nair S. "Climate Change and Water: Examining the Linkages," in David Michel and Amit Pandya, Eds. *Troubled Waters: Climate Change, Hydropolitics, and Transboundary Resources* (Washington D.C.: The Henry L. Stimson Center, 2009): Chapter 1: pp. 1-16.

Kiparsky, M. et. al., "Climate and Water: Knowledge of Impacts to Action on Adaptation," *Annual Review of Environment and Resources* 37, 2012: n.p.

CLICO. "Will states see more water conflicts as the climate changes?" CLICO Policy Brief No. 3, March 2012.

8. Oct 25th – Climate Change and Food Security

This summer's drought has given us an interesting insight into the potential impacts of future climate change on food security and stability. What is in store for the global food system as a result of climate change? Will food shortages, high prices, and protectionism be common? Are we entering dark days for global food availability? How will climate change impact Canada's position in the global food system? Will food insecurities lead to increased civil conflict? This session begins to ask some of these questions and unpack the implications for Canada.

Required Readings:

Vermeulen, S.J. et. al. "Climate Change and Food Systems." *Annual Review of Environment and Resources*. 37, 2012: n.p.

Godfray, H. C. et al., "Food Security: The Challenge of Feeding 9 Billion People," *Science* 327, 12 Feb. 2010: pp. 812-818.

Gornall, J. "Implications of Climate Change for Agricultural Productivity in the Early 21st Century," *Philosophical Transactions of the Royal Society B*. 365, 2010: pp. 2973-2989.

Kallis, G. "Droughts." *Annual Review of Environment and Resources*. 33, 2008: pp. 85-118.

Foresight. *The Future of Food and Farming*. Executive Summary. (London: The Government Office for Science, 2011).

9. Nov 1st – Climate Change, Disasters, Extreme Events, and Human Security

A short time ago, on the seventh anniversary of Hurricane Katrina, another hurricane struck the New Orleans area. It seemed as if history was about to repeat itself. However, the billions of dollars that have been spent since 2005 to repair New Orleans and re-build its flood defences have so far been successful; they held up under the recent storm. However, will such defenses hold in a future warming world? Disaster damages have steadily increased globally over the past two decades, as the impacts of anthropogenic warming have begun to impact extreme climatic events. Are we on the cusp of decades of severe storms and climate-induced natural disasters? How will future climate change impact extreme climatic events, disasters, and human security? What is the extent of human vulnerability to the climatic extremes expected in a warming world? This session will explore these themes globally and offer insights on the potential impacts for Canada.

Required Readings:

Intergovernmental Panel on Climate Change. ‘Summary for Policymakers’. In: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.). A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. New York: Cambridge University Press, 2012: pp. 3-21. (Complete report available on OWL.)

Webersik, 2010: chapter 3, pp. 47-66.

Mark Pelling, “The Vulnerability of Cities to Disasters and Climate Change: A Conceptual Framework,” in H.G. Brauch et al. (eds.), *Coping with Global Environmental Change, Disasters and Security*, Hexagon Series on Human and Environmental Security and Peace 5, Berlin: Springer-Verlag, 2011: pp. 549-558.

UNISDR, *Global Assessment Report on Disaster Risk Reduction*. Geneva, Switzerland: United Nations International Strategy for Disaster Reduction, 2011. Executive Summary, pp. 2-18.

10. Nov 8th – Climate Change and Migration

Migration has long been considered to be one of the most immediate and risky social impacts of climate change. However, migration is inherently difficult to explain and predict because so many decisions go into a household's decision to migrate. How will climate change affect migration in the coming decades and what will be the security implications of these impacts for Canada and the wider planet? Are we on the cusp of even larger movements of climate change refugees?

Required Readings:

Webersik, 2010: chapter 4, pp. 67-86.

Black, R. et. al., “The Effect of Environmental Change on Human Migration.”
Global Environmental Change 21S, 2011: S3–S11.

Warner, K. et al., “Climate Change, Environmental Degradation, and Migration.” *Natural Hazards*. 55(3), 2010: 689–715.

Maystadt, Jean-Francois and Mueller, V. “Environmental Migrants: A Myth?”
IFPRI Research Brief 18 (Washington D.C.: International Food Policy Research Institute, 2012.

11. Nov 15th – Climate Change and Violent Conflict

The links between climate change and violent conflict have long been disputed. The debates harken back to debates in the 1990s on the relationship between environmental change and violent conflict. In fact, the new research on climate change-violent conflict linkages extensively borrows from that earlier research to hypothesize possible outcomes, social effects, and implications. This week’s readings unpack the complex linkages between climate change and human conflict and highlight the interactive and multi-causal nature of processes that are needed to transmit the social impacts of climate change into different types of violent conflict. This research is often split between quantitative and qualitative work, with large-N quantitative work getting the majority of attention since 2007, particularly as it relates to possible violent conflict in developing regions such as Africa.

Required Readings:

Webersik, 2010: chapter 2, pp. 21-46.

Theisen, O.M. et. al., “Climate Wars? Assessing the Claim That Drought Breeds Conflict,” *International Security* 36(3), Winter 2011/12: pp. 79-106.

Buhaug, H. et. al., “Implications of Climate change for Armed Conflict,” in Robin Mearns and Andrew Norton, Eds. *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World* (Washington D.C.: The World Bank, 2010): pp. 75-101.

Geoffrey D. Dabelko, “Planning for climate change: the security community’s precautionary principle,” *Climatic Change* 96(1-2): pp. 13-21.

Supplementary Readings:

See the Special Issue of the *Journal of Peace Research* on climate change and conflict, volume 49, issue 3, 2012.

12. Nov 22nd - Energy Security and Climate Change

The twin challenges of finding enough energy to continue efforts to lift humanity out of poverty, but to do it in a way that does not doom the planet to climate catastrophe is perhaps one of the hardest problems humanity now faces. We've built our civilization on the back of cheap fossil fuels. Whether and how we will be able to make a transition away from our unsustainable past and the challenges this will entail is the focus of this session. The implications for Canada are tremendous because the current government has extensively bet our collective energy future on the exploitation of the oil sands in Western Canada, a fuel that is among the worst on the planet for emitting greenhouse gasses in production and use. More than 50% of Canada's current greenhouse gas emissions come from the oil sands. How will humanity confront the twin carbon and climate challenges in the coming decades and what will be the implications for Canada's energy security and energy policy?

Required Readings:

International Energy Association, *World Energy Outlook 2009* (Paris, IEA, 2009): Executive Summary. (Full report available on OWL)

Thomas Homer-Dixon with Nick Garrison, "Introduction" and "Conclusion" in *Carbon Shift: How the Twin Crises of Oil Depletion and Climate Change Will Define the Future* (Toronto: Random House, 2009): pp. 1-26 & 203-214.

David Keith, "Dangerous Abundance," in Thomas Homer-Dixon with Nick Garrison eds., *Carbon Shift: How the Twin Crises of Oil Depletion and Climate Change Will Define the Future* (Toronto: Random House, 2009): pp. 27-58.

Jean-Marie Chevalier, "The New Energy Crisis," in Jean-Marie Chevalier ed., *The New Energy Crisis: Climate, Economics and Geopolitics* (London: Palgrave-Macmillan, 2009): Chapter 1, pp. 6-59 & Chapter 9, pp. 256-280.

Supplementary Reading:

Smil, Vaclav. "Long-term Trends and Achievements," Chapter 1, *Energy at the Crossroads: Global Perspectives and Uncertainties* (Cambridge, Mass.: The MIT Press, 2003), 1-62.

Chow, Jeffrey et. al. "Energy Resources and Global Development," *Science*, Volume 302, 28 Nov. 2003: 1528-1531.

13. Nov. 29th – Climate Change and Economic Security

Climate change poses fundamental challenges to the global economic system, given the path of carbon-intensive economic development that has driven civilization over the past 200 years. The costs of climate change and the economic costs and implications of attempts to mitigate and adapt to the impacts with climate change are examined in this session, along with a detailed examination of the economic costs of climate change to Canada.

Required Readings:

Stern, Nicholas. *The economics of climate change: the Stern review*. (Cambridge, UK: Cambridge University Press, 2007): Executive Summary. Full report available on OWL and on reserve at Weldon.

Canada. National Round Table on the Environment and the Economy, *Paying the Price: The Economic Impacts of Climate Change for Canada*. (Ottawa: NRTEE: 2011).

December: Review Position Papers Posted on OWL

14. Jan 10th – Term 2 Begins -----Reminder! 2 Page Memos Due Jan. 7th -----
Required Readings: Read 2 Page Memos by other students.

15. Jan 17th

16. Jan 24th

17. Jan 31st

18. Feb 7th

19. Feb 14th

20. Feb 21st READING WEEK

21. Feb 28th

22. Mar 7th

23. Mar 14th

Term 2 is composed entirely with the group project. A more detailed schedule will be developed early in the new year during our scheduling and planning meetings.

24. Mar 21st

25. Mar 28th

26. April 4th

27. April 11th – Last Class – Presentation of Report to Invited Experts T.B.C.
Western OWL

This course will utilize Western OWL as a learning tool on a regular basis. OWL (powered by Sakai) replaced Web-CT OWL for all Western courses starting spring 2012.

Login to OWL by going to <https://owl.uwo.ca/portal> and entering your user ID and password. Check that you have access to your course.

Students will turn in assignments electronically using the OWL assignment tool. Student submissions will be time stamped when submitted online. All assignments are due at 11:59pm Eastern Standard Time on the due date. Late submissions will be assessed a 5% per day late penalty, weekends included.

Student Problems with OWL...

If you are experiencing problems with OWL, there are three ways of getting help. First, you can contact the ITS Help Desk at (519) 661-3800. Next, you can submit a question online here: <https://servlet.uwo.ca/vistahelpdesk/>. Finally, you can stop by the ITS help desk in person. Directions and hours are here: <http://www.uwo.ca/its/helpdesk/>

For hours and additional contact information please visit <http://www.uwo.ca/its/helpdesk/>

Additional OWL student help information can be found here:

<https://owl.uwo.ca/portal/tool/f8597ddc-7aaa-4ff6-a0dc-ee89000d4073?pageName=%2Fsite%2F8fdbf430-43ff-4df1-b004-f180db17dc0b%2Fstudent+information&action=view&panel=Main&realm=%2Fsite%2F8fdbf430-43ff-4df1-b004-f180db17dc0b>

PLAGIARISM

Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offense (see Scholastic Offence Policy in the Western Academic Calendar).

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All

papers submitted will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

The following rules pertain to the acknowledgements necessary in academic papers.

A. In using another writer's words, you must both place the words in quotation marks and acknowledge that the words are those of another writer.

You are plagiarizing if you use a sequence of words, a sentence or a paragraph taken from other writers without acknowledging them to be theirs. Acknowledgement is indicated either by (1) mentioning the author and work from which the words are borrowed in the text of your paper; or by (2) placing a footnote number at the end of the quotation in your text, and including a correspondingly numbered footnote at the bottom of the page (or in a separate reference section at the end of your essay). This footnote should indicate author, title of the work, place and date of Publication and page number. Method (2) given above is usually preferable for academic essays because it provides the reader with more information about your sources and leaves your text uncluttered with parenthetical and tangential references. In either case words taken from another author must be enclosed in quotation marks or set off from your text by single spacing and indentation in such a way that they cannot be mistaken for your own words. Note that you cannot avoid indicating quotation simply by changing a word or phrase in a sentence or paragraph which is not your own.

B. In adopting other writer's ideas, you must acknowledge that they are theirs.

You are plagiarizing if you adopt, summarize, or paraphrase other writers' trains of argument, ideas or sequences of ideas without acknowledging their authorship according to the method of acknowledgement given in 'A' above. Since the words are your own, they need not be enclosed in quotation marks. Be certain, however, that the words you use are entirely your own; where you must use words or phrases from your source; these should be enclosed in quotation marks, as in 'A' above.

Clearly, it is possible for you to formulate arguments or ideas independently of another writer who has expounded the same ideas, and whom you have not read. Where you got your ideas is the important consideration here. Do not be afraid to present an

argument or idea without acknowledgement to another writer, if you have arrived at it entirely independently. Acknowledge it if you have derived it from a source outside your own thinking on the subject.

In short, use of acknowledgements and, when necessary, quotation marks is necessary to distinguish clearly between what is yours and what is not. Since the rules have been explained to you, if you fail to make this distinction, your instructor very likely will do so for you, and they will be forced to regard your omission as intentional literary theft. Plagiarism is a serious offence which may result in a student's receiving an 'F' in a course or, in extreme cases, in their suspension from the University.

If you are unsure about what plagiarism is or how to avoid it, ask me!

MEDICAL ACCOMMODATION

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. Please go to https://studentservices.uwo.ca/secure/medical_accommodations_link_for_OOR.pdf to read about the University's policy on medical accommodation. Please go to <http://www.uwo.ca/univsec/handbook/appeals/medicalform.pdf> to download the necessary form. In the event of illness, you should contact Academic Counseling as soon as possible. The Academic Counselors will contact the instructors in the relevant courses about the accommodation. Once a decision has been made about accommodation, the student should contact his/her instructors to determine a new due date for term tests, assignments, and exams.

If you or someone you know is experiencing distress, there are several resources here at Western to assist you. Please visit <http://www.uwo.ca/uwocom/mentalhealth/> for more information on these resources and on mental health.

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.