

**ENVR 630-Civilization and the Environment:
From the Big Bang to the Anthropocene
Fall 2016
Working Syllabus 9/5/16**

Faculty

Professor Peter G. Brown
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Sciences
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Meetings by appointment in person and by skype welcome

Technical Support

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Please include "ENVR 630" in the subject line of all emails to Caleb

Class Schedule

Formal classes: Wednesday 2:35-5:25
McGill: NRS Conference Room, MS3-041
York: Stedman 114G or 120E
UVM: Gund Conference Room

Attendance is expected at all classes unless there is a compelling reason to miss a class. If you have other obligations that will keep you from more than one class session *you should not enrol.*

Rationale

Human activity is overwhelming and degrading natural systems both locally and globally at an accelerating rate. These activities have dramatically negative implications for the future of most forms of life, including humans. Major ecosystem collapses are not only likely, but some are probably already and irreversibly underway. Yet our responses at the personal and institutional level remain largely fragmented and ineffective, if they exist at all. We lack a coherent way to conceptualize the issues and to evaluate the success and/or failure of responses to unprecedented circumstances of the Anthropocene. Our institutions and the ethical bases on which they rest, are mainly at odds with our ability to conserve and sustain the essential elements of the biosphere. But there is much that can be done on all levels from the personal to the international to change direction, and enable a flourishing earth. Our aim in ENVR 630 is to explore how we think about the human/Earth relationship in formulating, or failing to formulate, how this can be accomplished.

The course is designed for people interested in environmental philosophy and policy as well as those who may be planning careers of practice--in business, finance, public policy, environmental sciences and policy, international development, engineering, law, forestry, medicine, plant or animal agriculture, dietetics and nutrition, genetic or bio-systems engineering, and the like. The course provides for the critical consideration of a number of conceptual frameworks that we customarily use, implicitly or explicitly, in thinking about the relationship of humans, other species, and more generally our planet and its life support systems. The practical consequences of these frameworks are considered. The aims of the course are therefore to enrich our ability to think about the moral and conceptual dimensions of the role as citizens of planet earth and to provide a means for developing policies at various scales to alleviate, mitigate, and possibly reverse the accelerating decline in life's prospects.

The main purpose of ENVR 630 is to describe and define a different picture of humanity's place on Earth and in the Universe than that assumed by the current dominant culture. It is our conviction that many of the scientific discoveries of the last 200 years offer fresh perspectives on the human self, our origins, and our possible futures that, if widely understood, could lead to an enduring and respectful human presence on Earth by accounting for limited resources as well as the functioning of planetary life support systems. This new (or, more likely, rediscovered) way of living for humankind would thus respect, enhance, restore, and protect the commonwealth of life.

We assume that students are familiar with the major factors which are dimming life's prospects. For those who require a refresher, please see the Reading List we assembled at the beginning of the term in the course Dropbox folder.

Course Details

Learning Objectives

By the end of the course, students will be able:

- (1) to gain an understanding of how science can be used to inform environmental policy and human activities;
- (2) to appreciate the complexity of the biogeochemical systems that support life and the possibility that human activities can change the state of these systems to ones that do not favour life's prospects;
- (3) to understand that human economic activity and modern environmental policy fails to protect life's prospects partly because they draw on narratives that are not informed by a scientific understandings of how the world functions such as provided by "big history";
- (4) to grasp the implications of a worldview for the human /Earth relationship and how we perceive our place in the cosmos.
- (5) to illustrate the implications of an embedded worldview focusing on the following normative systems: law; economics; finance; ethics; and governance;
- (6) to define societies' ethical objectives; to understand how to measure changes in reaching societies ethical objectives; and
- (7) to deepen, articulate, and show the consequences of a sense of personal responsibility for life's prospects.

Electronic devices have been shown to impede learning and are not allowed in the classroom; and the taking of notes on them is not as effective as doing it manually. If you insist on using them for note taking please send Peter the notes at the end of class.

Required Text

The Systems View of Life: A Unifying Vision
Fritjof Capra and Pier Luigi Luisi

Materials

Weekly readings and other materials are available through the course Dropbox folder. Contact Caleb if you do not have access to the folder.

Weeks 2 through 6 include material on the Coursera course on Big History (<https://www.coursera.org/learn/big-history>). Please create a free Coursera account to access the course. The Assigned Readings section below lists the assigned content for each week.

Grading and Participation

Classes will be broken down into three parts:

1. A presentation by the course instructors or guests—taking up about ½ of the class time;
2. Breakout groups at each of the three locations—about 30 minutes; and
3. A general discussion relating the class based on student reading questions, and from the breakout groups.

Course assessments will be based on three components:

1. Questions submitted for discussion weekly and the quality of the questions (20%)
2. Submission of completed quizzes from Big Bang MOOC (10%)
3. A brief 2 page midterm paper on the Judaeo-Christian-Muslim responses to the climate crisis, or a topic approved by the instructor – due Oct 30th (20%)
4. The 5 page final term paper should analyse and give recommendations concerning the climate crisis from the point of view of any of the three ontologies discussed in the course, and/or the orphans – due Dec 15th (50%)

Reading Questions

All students must submit one question each week based on the readings for the class to Caleb Gingrich by email (caleb.gingrich@mail.mcgill.ca) before 3 PM on the Tuesday before the class. We expect the students whose questions are selected will lead the general discussion which will make up the third part of the class. **NB: questions do not need to be submitted for the first class.**

These questions can be of two types: relating the topic of the week to the three cosmological narratives (Judaeo-Christian, First Nations, and Big History); and/or to the other readings for that week which are concerned with the moral and conceptual foundations of our responses to the climate crisis in particular and the Anthropocene in general.

Quizzes from Big History MOOC

Each week for the second through sixth week of the course, a week or two of the Big History MOOC is assigned. At the end each week there are quizzes that review the content of the videos for that week (**not** the quiz labeled ‘Claim Tester’). Please complete the quiz of the assigned week(s), take a screen shot of the top of the results page and send it to Caleb.

Requirements for Papers

Both papers should be in the form of “briefs” – that is concise, customized summaries of the facts and issues on the selected topic intended to inform the addressee’s position or actions. They may be addressed to anyone you wish; e.g. Quebec Premier Philippe Couillard; Pope Francis; the UN Secretary General; the Principal at McGill; Bill McKibbin; the Chairperson of Suncor, authors of the readings—**dead or alive**, etc. The briefs must draw on the readings and may support or criticise them.

Briefs must be submitted electronically and using standard word formatting. Please:

- Use single spaced, Times New Roman 12 pt font
- Submit Word documents (.doc or .docx are both acceptable, PDF’s are NOT)
- Avoid placing additional information in appendices
- When quoting directly from other sources, use quotation marks and cite the reference
- Email to Caleb with “ENVR 630” somewhere in the subject line at caleb.gingrich@mail.mcgill.ca

Papers will be received by email only and the instructor will read them and provide comments directly in your papers, electronically, and will return them to you by email and will assign a grade (A, B, C, etc...).

Papers are to be submitted by email by midnight on the due date to Caleb with ENVR 630 in the subject line at caleb.gingrich@mail.mcgill.ca. Late papers will be penalized 5% off of the awarded grade for each day they are late (including weekends).

Midterm Paper

The midterm paper will be 2 pages, single spaced, 12 pt Times New Roman font, due **midnight, October 30th**. The paper should discuss, defend, and/or critique the Judaeo-Christian-Muslim (JXTNM) responses to the climate crisis or to another topic of your choice approved by the instructor.

If you wish to have comments on your proposed brief please send a 100 word precise, or a less than one page outline to Caleb **before 6pm on October 24th**. He will forward any received to Peter.

Students whose first paper is not well executed may be asked to seek a writing tutor.

Final Term Paper

The final term paper will be 5 pages, single spaced, 12 pt Times New Roman font, **due 11:59pm, December 15th**. The paper should analyse and give recommendations concerning the climate crisis from the point of view of any of the three ontologies discussed in the course and/or the orphans, or another topic of choice with approval from the instructor.

If you wish to have comments on your proposed brief please send a 100 word precise, or a less than one page outline to Caleb **before 11:59pm on November 28th**. He will forward any received to Peter.

Weekly Readings and Course Structure

Part One: Worldviews and Thought Lineages

Week 1, September 7th: The Anthropocene and Stories We Live By

Lecture

Section 1: *Introduction to the Course*, Peter Brown

Section 2: *What is the Anthropocene*, Peter Brown

Section 3: *The First Nation's Perspective*, Clayton Tomas Muller

Section 4: *Intro to Big History MOOC*, Caleb Gingrich

Readings

- Rockstrom, J., et al. (2009). A safe operating space for humanity. *Nature*, 461(7263), 472-475. <http://dx.doi.org/10.1038/461472a>
- Oldfield, F., et al. (2014). The Anthropocene Review: Its significance, implications and the rationale for a new transdisciplinary journal. *The Anthropocene Review*, 1(1), 3-7. <http://dx.doi.org/10.1177/2053019613500445>
- Williston, B. (2015). Chapter 2, The Anthropocene Project. *The Anthropocene Project: virtue in the age of climate change*. Oxford: Oxford University Press.
- Carrington, D. (29/08/2016). The Anthropocene epoch: scientists declare dawn of human-influenced age. *The Guardian*. Retrieved from <https://www.theguardian.com/environment/2016/aug/29/declare-anthropocene-epoch-experts-urge-geological-congress-human-impact-earth>

Week 2, September 14th: The Judaeo-Christian Worldview

Lecture

Section 1: The View from the Vatican, Clerics, and Some Critics, Peter Brown

Readings

- The Book of Genesis 1-4, <https://www.biblegateway.com/passage/?search=genesis+1-4&version=NRSV>
- Francis. (2015). Encyclical Letter *Laudato Si'* of the Holy Father Francis On Care For Our Common Home. Retrieved from: http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html
- The Sermon on the Mount, Matthew 5-7, <https://www.biblegateway.com/passage/?search=matthew+5-7&version=NRSV>
- Goodin, R. E. (1985). Chapter 5: Vulnerabilities and Responsibilities. *Protecting the vulnerable: a reanalysis of our social responsibilities*. Chicago: University of Chicago Press.
- Islamic Declaration on Global Climate Change, from the International Islamic Climate Change Symposium. <http://islamicclimatedeclaration.org/islamic-declaration-on-global-climate-change/>

- To the Jewish People, to all Communities of Spirit, and to the World: A Rabbinic Letter on the Climate Crisis.
<https://theshalomcenter.org/civicrm/petition/sign?sid=17>

Big History Course: Week 1

Further Reference:

- Stanley, J., et al. (2009). *A Buddhist response to the climate emergency*. Boston: Wisdom Publications.
- Religious Statements on Climate Change.
<http://www.interfaithpowerandlight.org/religious-statements-on-climate-change/>

Week 3, September 21th: Critics and Consequences

Lecture

Readings

- White, Lynn. (1974) The historical roots of our ecologic crisis. *Ecology and religion in history*. New York: Harper and Row.
- Singer, P. (1975). Chapter 5: Man's Dominion: a short history of speciesism *Animal liberation*. New York: Ecco.
- Merchant, C. (1995). Reinventing Eden: Western Culture as a Recovery Narrative. In W. Cronon (Ed.), *Uncommon ground: toward reinventing nature*. New York: W.W. Norton & Co.

Big History Course: Week 2

Week 4, September 28th: The Meaning and Challenge of Big History

Lecture

Waking Up in the Anthropocene: Big History and the Biosphere, Rich Bundell

Readings

- Schrodinger, E. (1944). Chapter 6: Order, Disorder and Entropy. *What is life? The physical aspect of the living cell*. Cambridge: Cambridge University Press.
- Schneider, E.D, Kay, J.J., (1995). Order from Disorder: The Thermodynamics of Complexity in Biology, in Michael P. Murphy, Luke A.J. O'Neill (ed), *What is Life: The Next Fifty Years. Reflections on the Future of Biology*, Cambridge University Press, pp. 161-172
- Chaisson E. (2013) Using complexity science to search for unity in the natural sciences. In Lineweaver, Davies and Ruse (Ed.), *The Self-Organizing Universe: Cosmology, Biology, and the Rise of Complexity*. Cambridge University Press.

Big History Course: Week 3

Week 5, October 5th: Worldviews and the Stability of Knowledge

Lecture

20th Century Science and the Social Science and Humanities (Orphans), Peter Brown

Readings

- Native American Myths of Creation
<http://www.crystalinks.com/nativeamcreation.html>
- Brown, P.G. & Erickson, J.D. (2016) How Higher Education Imperils the Future: An Urgent Call for Action. *Balance* (2)
- Nordhaus, W. (2007). Section I: Summary for the Concerned Citizen. *The Challenge of Global Warming: Economic Models and Environmental Policy*.
- Brown, P.G. (1992). Climate change and the planetary trust. *Energy policy*, 20(3), 208-222. [http://dx.doi.org/10.1016/0301-4215\(92\)90079-H](http://dx.doi.org/10.1016/0301-4215(92)90079-H)

Big History Course: Week 4 and 5

Part Two: The Orphans

Ethics for the Anthropocene

Week 6, October 12th: Emancipatory Ethics

Lecture

Peter Brown

Readings

- The Lord's Prayer, Matthew 6:9-13,
<https://www.biblegateway.com/passage/?search=matthew+6%3A9-13&version=NRSV>
- The Ten Commandments, Exodus 20,
<https://www.biblegateway.com/passage/?search=Exodus+20>
- Immanuel Kant, (1785). Abbott (Translator). Preface. *Fundamental Principles of the Metaphysics of Morals*. <http://www.gutenberg.org/cache/epub/5682/pg5682-images.html>
- John Stuart Mill, (1879). Chapter 2: What Utilitarianism is. *Utilitarianism*.
<https://www.gutenberg.org/files/11224/11224-h/11224-h.htm>
- Gifford Pinchot, (1914). The Forester's Point of View. *The Training of a Forester*.
<https://www.gutenberg.org/files/31367/31367-h/31367-h.htm>
- Elliott, H. (2005). Chapter 1: The Factual Refutation of Moral Theories, Chapter 2: A Critique of Western Ethics *Ethics for a finite world: an essay concerning a sustainable future*. Golden, Colo.: Fulcrum Pub.
- Wolfe, P. (2006). Settler Colonialism and the elimination of the Native. *Journal of Genocide Research*, 8(4), 387-409.

Big History Course: Weeks 6

Week 7, October 19th: Embedded Ethics

Lecture

Ellen Gabriel, Invited

Readings

- Mohawk Thanksgiving Prayer
- Leopold, A., & Schwartz, C. W. (1966). Part 4: The Upshot *A Sand County almanac. With other essays on conservation from Round River*. New York: Oxford University Press.
- Santayana, G. (1905). Chapter 10: Piety *The Life of Reason* (Vol. Reason in Religion).
- Brown, P. G. (2012). Ethics for Economics in the Anthropocene.
- Berry, T. (2011). Chapter 9: Ethics and Ecology. *The Great Work: Our Way into the Future*: Crown/Archetype.

Course text: Introduction and Part 1

Economics for the Anthropocene

Week 8, October 26th: Emancipatory Economics

Lecture:

Jon Erickson

Readings

- Hayek, F. (1975). Summary by the Author. *The Road to Serfdom*. [Chicago]: University of Chicago Press.
- Tietenberg, T. H., & Lewis, L. (2012). Chapter 1: Visions of the Future *Environmental & natural resource economics*. Upper Saddle River, N.J.: Pearson Education.
- Brown, Democracy in the Anthropocene. *Center for Humans & Nature*
<http://www.humansandnature.org/democracy-peter-g.-brown>

Course Text: Part 2

Week 9, November 2nd: Embedded Economics

Lecture

Winona Laduke, Invited.

Readings

- Berkes, F. (1999). Chapter 5: The Cree Worldview "from the inside". *Sacred ecology: traditional ecological knowledge and resource management*. Philadelphia, PA: Taylor & Francis.
- Brown, P.G. & Garver, G. (2008) Introduction and Chapters 1-4, *Right Relationship: Building a Whole Earth Economy*

- Boulding, K. (1966) Economics of coming spaceship Earth
- Gowdy, J & J. Erickson. (2005). The Approach of ecological economics *Cambridge Journal of Economics* (29): 207-222.
- Kool, R. (2013). Limits to Growth, environmental science and the nature of modern prophecy. *Ecological Economics*, 85, 1-5.
<http://www.sciencedirect.com/science/article/pii/S0921800912003758>

Course Text: Chapters 7-8

Law and Governance for the Anthropocene

Week 10, November 9th: Emancipatory Law and Governance

Lecturer

Peter Brown

Readings

- Locke's *The Second Treatise of Civil Government*, Chapter 5: Of Property. Online at: <http://www.constitution.org/jl/2ndtr05.htm>
- Locke's [The Second Treatise of Civil Government, Chapter 9: Of The Ends of Political Society and Governm ent](#)
- William Ophuls, *Requiem for Modern Politics*, Introduction.
- Brown, P.G. (2004) Are there any natural resources? *Politics and the Life Sciences*. 23(1).

Course Text: Chapters 9-10

Week 11, November 16th: Embedded Law and Governance

Lecture

Arthur Manuel, Invited

Readings

- *Unsettling Canada*, Arthur Manuel, selections
- G Garver: "Ecological Law"
- Peter Burdon, *Earth Jurisprudence*, Chapter 4, "A Theory of Earth Jurisprudence."
- Brown, P.G. & Garver, G. (2008) Chapter 5: Governance: New ways to stay in bounds and play fair, *Right Relationship: Building a Whole Earth Economy*
- Mock, W. B. T. (2011). Treaty of Westphalia. In D. K. Chatterjee (Ed.), *Encyclopedia of global justice*. Dordrecht; New York: Springer.

Course Text: Chapters 11-12

Further Interpretation of the Treaty of Westphalia (optional):

- Beaulac, S. (2004). The Westphalian Model In Defining International Law: Challenging The Myth. *Australian Journal of Legal History*, 8(2).

Week 12, November 23rd: Consilience

Lecture

“Is a Unified Interpretation of Reality Possible? Is it desirable?”, Peter Brown

Readings

- Wilson, E. O. Chapters 1,2 and 12 from *Consilience: The Unity of Knowledge*.
- Sideris, L. (2015). Science as Sacred Myth? Ecospirituality in the Anthropocene Age. *Journal For The Study Of Religion, Nature And Culture*, 9(2). <https://journals.equinoxpub.com/index.php/JSRNC/article/view/27259>

Course Text: Chapters 13-14

Week 13, November 30th: Education for the Anthropocene

Lecture:

Peter Brown

Readings

- Corntassel, J. (2012). Re-envisioning resurgence: Indigenous pathways to decolonization and sustainable self-determination. *Decolonization: Indigeneity, Education & Society* 1(1), 86-101.
- Brown, P. G., & Timmerman, P. (2015). Conclusion. Continuing the Journey of Ecological Economics: Reorientation and Research. *Ecological economics for the anthropocene: an emerging paradigm*. New York: Columbia University Press.

Course Text: Chapter 16-18

Optional Additional Reading

- McGregor, D. (2004). Coming full circle: indigenous knowledge, environment and our future. *American Indian Quarterly*, 28(3-4), 385-410.

Statement on Academic Integrity

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see <http://www.mcgill.ca/integrity/> for more information).

Language Requirements

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.