

**ENVR 630-Civilization and the Environment:  
From the Big Bang to the Anthropocene  
Fall 2017  
*Working Syllabus 9/4/17***

**Faculty**

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Meetings by appointment in person and by skype welcome

Professor Peter Burdon  
Adelaide Law School  
Distinguished Visitor at the McGill Faculty of Law and the Economics for the  
Anthropocene Project until October 31, 2017.  
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Meetings by appointment and skype welcome

**Technical Support**

Dana Praslickova [dana.praslickova@mcgill.ca](mailto:dana.praslickova@mcgill.ca)

**Class Schedule**

Formal classes: Wednesday 2:35-5:25  
NRS Conference Room, MS3-038  
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 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, as well as the dignity of the Earth itself..

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 scientific understandings of how the world functions such as provided by “big history”;

- (4) to grasp the implications of our worldviews 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**

*Energy, Complexity and Wealth Maximization* by Robert Ayres. (Springer International Publishing 2016) This should be read in its entirety over the course of the semester. It is available from Amazon and electronically through the McGill library.

### **Materials**

Weekly readings and other materials will be available through myCourses on the McGill website.

### **Grading and Participation**

Classes will be broken down into three parts:

1. Robert Ayres’ lectures are pre-recorded and should be watched before the beginning of class. Dr. Ayres will join us periodically to discuss course issues in person from his home in Paris.
2. A presentation by the course instructors or guests—taking up about ½ of the class time;
3. A general discussion relating the class based on student reading questions, and readings.

Course assessments will be based on three components:

Questions submitted for discussion weekly and the quality of the questions (20%) count for 20%. Two students should post questions, comments, or critique of the readings on the myCourses site by BY 5PM THE DAY BEFORE CLASS. These will be done in alphabetical order; and repeat once everyone has done one posting.

1. A 2-page midterm paper discussing, defending and/or critiquing the Judaeo-Christian-Muslim (JXTNM) responses to the climate crisis – due October 21<sup>st</sup> (20%). Alternative topics are fine if approved by Professor Ayres and/or Brown.

2. A 5-page final term paper that analyses and give recommendations concerning the crises of the Anthropocene from the point of view of any of the three ontologies discussed in the course, and/or the orphans – due December 15<sup>th</sup> (50%); or any other topic approved by the Professors Ayres and Brown.
3. Quality and quantity of class participation. (10%)

### **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, the head of the Bank of Canada, authors of the readings—and other persons or entities **dead or alive**, etc. The briefs must draw on the readings and may support or critique 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

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 Peter with ENVR 630 in the subject line. Late papers will be penalized by 5% off 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 30<sup>th</sup>**. The paper should discuss, defend, and/or critique the Judaeo-Christian-Muslim (JXTNM) responses to the climate crisis or 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 Peter **before midnight on September October 15<sup>th</sup>**. She will forward any received to Peter.

Students whose first paper is not well executed may be asked to seek a writing tutor; and/or rewrite the paper.

### **Final Term Paper**

The final term paper will be 5 pages, single spaced, 12 pt Times New Roman font, **due midnight, December 15<sup>th</sup>**. The paper should analyse and give recommendations concerning the crises of the Anthropocene from the point of view of any of the three ontologies discussed in the course and/or the orphans.

If you wish to have comments on your proposed brief please send a 100- word precise, or a 1-page annotated outline to Peter **before 6PM on November 28<sup>th</sup>**. Please put ENVR 630 in the subject line.

# Weekly Readings and Course Structure

## Part One: Worldviews and Thought Lineages

### Week 1, September 6<sup>th</sup>: The Anthropocene and Stories We Live By

#### Lecture

- Section 1: *Introductions* Robert Ayres, Peter Brown and Peter Burdon  
Section 2: Student self-introductions  
Section 3: Course organization: Infrastructure;/Structure/Superstructure  
Section 4: Key Course Concepts: Peter Brown  
Section 5: What is the Anthropocene? Peter Burdon, Peter Brown, Robert Ayres  
Section 6: Talk by David Korten

#### 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>
- 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>
- Additional readings – Earth`s sixth mass extinction event under way, scientists warn

### Week 2, September 13<sup>th</sup>: The Judeo-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>
- [Book of REVELATIONS](#)
- 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](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.

**Additional Readings:**

- 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/civicism/petition/sign?sid=17>

**Further References:**

- 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 20<sup>th</sup>: Critics and Consequences**

**Lecture:** Is western civilization and idea worth trying? - Is “Stewardship” Enough?  
Peter Brown

**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.
- Hardin, G. “Carrying Capacity as an Ethical Concept”

**Week 4, September 27<sup>th</sup>: How Is Life Possible in an Entropic Universe?**

**Lecture:** The Miracle of Life? Peter Brown

**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.

## Week 5, October 4<sup>th</sup>: Worldviews, the Baconian Project, Communities of Practice.

### Lecture

*20<sup>th</sup> 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)
- Francis Bacon, *The New Organon, Selections*....
- Yates F.A., 1999 – Ideas in the North European Renaissance

## Part Two: The Orphans

### Ethics for the Anthropocene

## Week 6, October 11<sup>th</sup>: Emancipated Ethics

### Lecture

*Vertical Religion and the Problems of Deontological and Consequentialist Ethics*, 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.

## Week 7, October 18<sup>th</sup>: Embedded Ethics

### Lecture

*Barriers to Thinking Like a Planet.* Baird Callicott

### 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.

## Law and Governance for the Anthropocene

### Week 8, October 25 Emancipated Law and Governance

#### Lecture

“Property” and its Problems. Peter Burdon and 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 Government](#)
- Peter Burdon, 'What is Good Land Use?' (2010) 34(3) Melbourne University Law Review 708
- William Ophuls, *Requiem for Modern Politics*, Introduction.
- Brown, P.G. (2004) Are there any natural resources? *Politics and the Life Sciences.* 23(1).

## Week 9, November 1<sup>st</sup>: Embedded Law and Governance

#### Lecture

John Borrows, 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.

**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).

**Economics for the Anthropocene**

**Week 10, November 8<sup>th</sup>. Emancipated 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 11, November 15<sup>th</sup>: Embedded Economics**

**Lecture:** Energy and Economics, Robert Ayres

**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.

**Week 12, November 22<sup>nd</sup>: 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>

## **Week 13, November 29<sup>th</sup>: Life's Earthly Prospects.**

**Student presentations:** Each student presents a 10-minute summary of their view of how humanity should respond to the Anthropocene. This may be based on the same subject as their final brief for the course.

### **Readings**

- 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.
- 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>

### **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.