

Syllabus
Global Past, Global Present:
From the Big Bang to Globalization
LCC 350-I, Class 5070, Spring 2012

Reality is that which, when you stop believing in it, doesn't go away. —Philip K. Dick

Big History is a history of the universe from its origins to the present. Its aim is to provide a wide, contextual understanding of human existence by integrating knowledge from the natural and social sciences with the humanities. The result is a more realistic understanding of how humans fit into the vast expanse of the universe, instead of the old-fashioned way of orienting the universe around humans. Big History also considers the challenges of modern globalization, with an important theme being the quest to develop sustainable and ethical lifestyles. The overall focus is on what such knowledge might mean in our everyday lives and how we - as responsible individuals and a responsible species - should conduct ourselves in this world and off of it, as we venture further into our galaxy and beyond.

Our class meeting time is on Wednesday, 09h00 to 11h30, in room 105, at USM's Lewiston-Auburn College. Carefully read the handout, General Course Guidelines, which provides important details for successful completion of this course. Students may communicate through our Blackboard internet site at (www.courses.maine.edu). The following course materials are required and may be obtained in the LAC bookstore:

David Christian. 2004. *Maps of Time: An Introduction to Big History*. Berkeley: University of California Press.

Khassan Baiev. 2004. *The Oath: A Surgeon Under Fire*. New York: Walker Publishing. The paperback edition is titled, *Grief of My Heart*.

Alan Lightman. 1993. *Einstein's Dreams*. New York: Random House.

Harvey Pekar, Heather Roberson & Ed Piskor. 2007. *Macedonia: What Does it Take to Stop a War?* New York: Random House.

Manu Chao. 2007. *La Radiolina*, Manu Chao. (Music CD).

Throughout the course, you should review the following about cosmology, evolution and life:

ChronoZoom, by Walter Alvarez and Roland Saekow, Earth & Planetary Science, University of California, Berkeley: (<http://chronozoomtimescale.org>).

Cosmic Evolution: From Big Bang to Humankind, Eric Chaisson, Tufts University: (https://www.cfa.harvard.edu/~ejchaisson/cosmic_evolution/docs/splash.html).

Universcale, Nikon: (www.nikon.com/about/feelnikon/universcale/index.htm).

The Maine Public Broadcasting Network's program, *Living on Earth*: (<http://www.loe.org/>).

We have assignments in the weekly journal, *Science News*, and the monthly journal, *New Internationalist*, as well as in other periodicals. The LAC library subscribes to them online and maintains some hard copies. In order to learn how to access journal articles, please review the screencast about this at: (www.screencast.com/t/ZjYzYWVjY), and then contact a reference

librarian. Don't wait until the day of class! Many articles (and films) also can be found on our e-reserve site at (<http://docutek.ursus.maine.edu>) for which the password is: fxg9rhsv.

There will be quizzes, team projects, and a community project. Students should join the international Facebook club for Big History, which was begun and is maintained by students from USM. Jump in and offer ideas: It's fun...& informative!

Class Schedule

I. Introduction. 18 January 2012

Introductions, team formation. Watch David Christian's presentation about Big History at a TED Conference in 2011: (<http://www.usm.maine.edu/bighistory>). In-class film: The Elegant Universe, Part 1: "Einstein's Dream," NOVA and others, Joseph McMaster (director), 2003.

Section One: The Universe & Earth

II. Origins of the Universe—fourteen to five billion years B.P. 25 January 2012

Lab exercise with LAC chemist Dan Stasko: "The Scientific Process - Simple Rules, Complex Organization." In-class film: The Elegant Universe, Part 3: "Welcome to the Eleventh Dimension," NOVA & others, Joseph McMaster (director), 2003. Assignments due for today are:

Read Maps of Time - "Introduction," Chapter 1 "The First 300,000 Years", Chapter 2 "Origins of the Galaxies & Stars" (pp. 1-56). Also, Appendix 1 "Dating Techniques, Chronologies, & Timelines" (pp. 493-504).

Read Eric Chaisson, "Cosmic Evolution - More than Big History by another Name," Evolution: A Big History Perspective, pp. 37-48, Leonid Grinin & others (editors), Volgograd: Uchitel Publishing, 2011: (<http://www.usm.maine.edu/bighistory/big-history-essays>).

View "The Known Universe," from the American Museum of Natural History, on YouTube at (www.youtube.com/watch?v=17jymDn0W6U).

Review: "Hubble Space Telescope," National Aeronautics & Space Administration: (www.nasa.gov/mission_pages/hubble/main/index.html).

Watch The Elegant Universe, Part 2: "String's the Thing," NOVA & others, Joseph McMaster (director), 2003. (On reserve in LAC library).

Begin reading Einstein's Dreams.

III. Solar System & Planet Earth—five to one billion years B.P. 1 February 2012

Class will be held at USM-Portland, where we will see an astronomy presentation at the Southworth Planetarium and then discuss Maine's continental drift. We will meet at the Planetarium. For directions visit their website (www.usm.maine.edu/~planet/). The assignments due for today are:

Read Maps of Time - Chapter 3 "Origins & History of the Earth" (pp. 57-75), Appendix 2 "Chaos and Order" (pp. 505-511).

Watch Origins: Earth is Born, NOVA & others, Alice Harper (director), 2004; running time = 60 minutes (on reserve at LAC library & on e-reserve).

Review "The Periodic Table of Videos," University of Nottingham (United Kingdom), at: (<http://www.periodicvideos.com/#>).

Review Christopher Scotese's Paleomap Project at: (www.scotese.com/Default.htm).

Listen to John Bullitt's "Hearing Earth: Rumbings of a Complex Planet," National Public Radio, 2006: (<http://www.npr.org/templates/story/story.php?storyId=6615446>)

Continue reading Einstein's Dreams.

IV. Life on Earth—one billion to ten million years B.P.

8 February 2012

In-class film: Origins: How Life Began, NOVA & others, Alice Harper (director), 2004; running time = 60 minutes. The assignments due for today are:

Read Maps of Time - Chapter 4 "The Origins of Life & the Theory of Evolution," Chapter 5 "The Evolution of Life and the Biosphere" (pp. 79-136).

Read Rachel Ehrenberg, "The Final Chemistry Frontier," Science News 177 (3), 30 January 2010: 26-29.

Read Paul Patton, "One World, Many Minds," Scientific American, Mind, 19 (6), December 2008: 72-79.

Read Susan Milius, "No Brainer Behavior," Science News 175 (13), 20 June 2009: 16-19.

Listen to Dan O'Connor's, "Rumbings from Underwater Giants," National Public Radio, 2007: (www.npr.org/templates/story/story.php?storyId=12205418).

Review The Encyclopedia of Life at (www.eol.org/).

Complete reading Einstein's Dreams.

V. Discussion & Activities, Section One

15 February 2012

In-class film excerpt on ethics and the scientific process: The case of physicist Lise Meitner (film excerpt and discussion) from Einstein's Big Idea, NOVA & others, Gary Johnstone (director), 2005; running time = 15 minutes.

Team Presentation 1: Each team must choose one of the movies listed below, research its scientific background, relate it to our course materials, and make a presentation - using film clips. The presentation must be directly related to our course materials to receive a passing grade. These films may be obtained from movie stores, online or through interlibrary loan. A well thought-out and well organized presentation related to the course material is required.

The Day After Tomorrow, Twentieth Century-Fox Film Corporation, Roland Emmerich

(director), 2004.

The Core, David Foster Productions, Jon Amiel (director), 2003; running time.

Deep Impact, Dreamworks SKG, Mimi Leder (director), 1998.

Contact, South Side Amusement Company and others, Robert Zemeckis (director), 1997.

Armageddon, Touchstone Pictures, Michael Bay (director), 1998; running time.

(Winter Break, Sunday, February 19, through Sunday, February 26)

****Section Two: Early Humans & the Earth****

VI. Early Humans—ten million to ten thousand years B.P.

29 February 2012

In-class film: The Future of Food, Lily Films, Deborah Koons (director), 2004; running time = 88 minutes. The assignments due for today are:

Read Maps of Time - Chapter 6 “The Evolution of Humans,” Chapter 7 “The Beginnings of Human History” (pp. 138-203).

Read Tina Saey, “Modern People Carry Around Neanderthal DNA, Genome Reveals,” Science News 177 (12), 5 June 2010, pp. 5-6.

Read Bruce Bower, “Evolution’s Ear,” Science News 174 (5), 30 August 2008, pp. 22-25.

Read “Edible Earth: In Search of Permaculture,” New Internationalist 402, July 2007: 4-20.

Read Fred Spier, “The Small History of the Big History Course at the University of Amsterdam,” which appeared in World History Connected 2 (2), May 2005, and is found at: (<http://www.usm.maine.edu/bighistory/big-history-essays>).

Paper 1: Using the materials that we have considered so far in this course, write a formal essay that has a minimum of 3-pages of text, linking cosmic origins to human development, and discuss what this means in your own life. At least 5 different sources from our assigned course materials must be used in a meaningful way with full citations.

VII. Origins of Agriculture—ten to five thousand years B.P.

7 March 2012

Team Presentation 2: Each team will make a brief presentation about an ancient crop, including a botanical description, an historical account, and a discussion of its modern varieties - all of which must be related to our course materials. The assignments due for today are:

Read Maps of Time - Chapter 8 “Intensification & the Origins of Agriculture” (pp. 206-244).

Read Edward Wilson, “Protect biodiversity hot spots & the rest will follow,” Science News, 20 December 2008: 32.

Review The Symphony of Science: (<http://www.symphonyofscience.com/>).

Begin reading Macedonia: What does it take to stop a war?

VIII. Power, Cities & States—five to one thousand years B.P.

14 March 2012

In-class film: Flow: For Love of Water, Seven Starr Productions & others, Irena Salina (director), 2008; running time = 93 minutes. The assignments due for today are:

Read Maps of Time - Chapter 9 "From Power over Nature to Power over People" (pp. 245-282).

Read George Ellis, "Physics, Complexity & Causality," Nature 435, 9 June 2005: 743.

Read Jared Diamond, "The Worst Mistake in the History of the Human Race," Discover Magazine, May 1987: 64-66 at (anthropology.lbcc.edu/handoutsdocs/mistake.pdf).

Read Gary Lawless, "Big History & Bioregions," in Evolution: A Big History Perspective (pp. 264-268), Leonid Grinin & others (editors), Volgograd: Uchitel Publishing, 2011: (<http://www.usm.maine.edu/bighistory/big-history-essays>).

Read "Water: Every Drop Counts," New Internationalist 354, March 2003: 9-28.

Continue reading Macedonia: What does it take to stop a war?

IX. Agro-Cultural Empires—five thousand to five hundred years B.P.

21 March 2012

In-class film: A Crude Awakening, Lava Productions, Basil Gelpke & Ray McCormack (directors), 2006; running time = 85 minutes. The assignments due for today are:

Read Maps of Time - Chapter 10 "Long Trends in the Era of Agrarian Civilizations" (pp. 283-332).

Read Jaman Matthews, "Coming Full Circle: Integrated Farming in Vietnam," World Ark, July 2007: 6-19; at: (www.heifer.org/site/c.edJRKQNiFiG/b.2877337/#).

Read Rachel Ehrenberg, "Let's get vertical, city...farms to grow up instead of out," in Science News 174 (8), 11 October 2008: 16-20.

Complete reading Macedonia: What does it take to stop a war?

(Spring Break, Sunday, March 25, through Sunday, April 1)

****Section Three, Modern Era****

X. Early Modernity—one thousand years B.P. to the present

4 April 2012

Community presentation with Rane Johnson-Stempson of Microsoft, who will discuss the new IT learning tool, ChronoZoom. Assignments due for today are:

Read Maps of Time - Chapter 11 "Approaching Modernity" (pp. 334-363).

Read Barry Rodrigue & others, Chechnya, the Caucasus & World Justice, Lewiston:

International Student Organization of Lewiston-Auburn & others, 2008, which can be found at: (<http://www.usm.maine.edu/hum/rcc>).

Begin reading The Oath.

XI. Globalization—ten to three hundred years B.P.

11 April 2012

Team Presentation 3: Each team should listen to Manu Chao's Radiolina. Choose a song from it, play it for the class, and explain its relationship to issues of globalization and our course materials, including today's materials. Also, do some online research about Manu Chao. The assignments due for today are:

Read Maps of Time - Chapter 12 "Globalization, Commercialization, & Innovation;" Chapter 13 "Birth of the Modern World;" (pp. 364-439).

Read Dennis Conway, "Globalization From Below," pp. 212-225, in Globalization's Contradictions: Geographies of Discipline, Destruction and Transformation, Dennis Conway and Nik Heynen (editors), London: Routledge, 2006 (E-reserve).

Read "Cotton: The Peril and the Promise," New Internationalist 399, April 2007: 2-21.

Watch *Плачущее солнце* (Crying Sun: The Impact of War in the Mountains of Chechnya). Memorial (Russia) & Witness (New York), Zarema Mukusheva (director), 2007; running time = 26 minutes: (http://www.youtube.com/watch?v=79_KHYJuutk).

Review the Population Reference Bureau's 2011 World Population Data Sheet, (http://prb.org/pdf11/2011population-data-sheet_eng.pdf).

Continue reading The Oath.

XII. The Modern World-three hundred years B.P. to the present.

18 April 2012

Team Presentation 4: Symbols, thoughts and representations of reality. Each team will choose one of the following "art films." For information about what constitutes an art film, you may read the Wikipedia entry about them at (http://en.wikipedia.org/wiki/Art_film). These films may be obtained from movie stores, online or through interlibrary loan. If anyone has difficulty obtaining one, contact the professor well in advance and he can assist you in finding a copy. You will analyze the film's symbolic meaning and make a presentation to the class - using film clips. The presentation must be related to your daily life, your own philosophies, and today's readings in Maps of Time and New Internationalist.

La Face cachée de la lune (The Far Side of the Moon), FCL Films & others, Robert Lepage (writer/director), 2003.

Солярис (Solaris), Mosfilm, Andrei Tarkovsky (director), 1972.

The Fountain, Warner Brothers Pictures and others, Darren Aronofsky (director), 2006.

Another Earth, Fox Searchlight, Mike Cahill (director), 2011.

Assignments due for today are: Read Maps of Time - Chapter 14 "The Great Acceleration of

the Twentieth Century” (pp. 440-464).

Read “Crisis! Crisis!” New Internationalist 418, December 2008: 4-31.

Continue reading The Oath.

XIII. Future Studies

25 April 2012

In-class film: Hubert Reeves, Star Teller, Canadian National Film Board, Iolande Cadrin-Rossignol (director), 2002; running time = 52 minutes. The assignments due for today are:

Read Maps of Time - Chapter 15 “Futures” (pp. 467-491).

Read “State of the World’s Oceans,” New Internationalist 397, January 2007: 2-27.

Review the Internet site for the World Social Forum:
(www.forumsocialmundial.org.br/index.php?cd_language=2&id_menu=).

Read Primo Levi, “Carbon,” The Periodic Table, New York: Schocken, 1975, 224-233:
(<http://www.pems.adfa.edu.au/~s9471553/level1/Teaching/Health02/CarbonStory.pdf>).

Complete reading The Oath.

XIV. Holocaust and Human Rights Center of Maine

2 May 2012

Field Trip to the Holocaust and Human Rights Center of Maine (for direction go to their website at www.hhrc.org/hhrchome.html). We will have a discussion with Director Robert Bernheim and watch the film: Were the House Still Standing: Maine Survivors and Liberators Remember the Holocaust, Robert Katz (director), running time = 80 minutes. Assignments due for today are:

Read “Justice after Genocide,” New Internationalist 385, December 2005: 2-21; and “Daring to Dream: Inspiration from the Majority World,” New Internationalist 400, May 2007: 4-20.

Read United Nations, “A Summary of United Nations Agreements on Human Rights,” (<http://www.hrweb.org/legal/undocs.html>).

Watch Ботинок (The Shoe), Luna Development & Production, Pavel Lungin (director), 1997; running time—3 minutes at (<http://www.youtube.com/watch?v=tiY8hCjTaG0>).

Discussion Forum 1: During this week, each student is required to talk with someone in their own community, in-person, about the human rights situation in Chechnya and the Caucasus, including what can be done to help, and then report about the results. In this exercise, you must discuss Dr. Baiev’s book and the booklet on Chechnya with your discussant. Write out the results and bring them to the MHHRC, discuss them with Dr. Bernheim and turn them in to the professor. This assignment will count as a paper.

XV. Final Exam

9 May 2012

This course challenges many traditional views of the universe and the human place in it. Moreover, it challenges individuals to reassess their own lives. Your assignment is to write a formal paper describing your vision of your role in the universe. You must incorporate at least ten different sources from our assigned course materials in a meaningful fashion, along with proper citations and a complete bibliography. The material used must come from all sections of the course - beginning, middle and end - for it to receive a passing grade. Strict attention must be paid to the conventions of a formal essay and it must consist of a minimum of five pages of text.