

HIST 141: Carbon—Element at the Center of History

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How has our society come to be so dependent on a single chemical element - carbon? How has it come to recognize that dependence as not only a central element of modern geopolitics but also as leading to a host of environmental concerns, capped but not exhausted by the worldwide anxiety over global warming? This course uses historical approaches with an interdisciplinary character to examine these questions and provide students with the intellectual tools to pursue the answers, not only within the context of the course but also beyond in their other academic efforts and, hopefully, in their lives and careers.

As an “I Course,” this is part of a university-wide experiment attempting to highlight our ability to develop courses that show the relevance of our scholarship and teaching to issues that are important to all of us. One key to the success of this experiment is the full engagement of the participants; this is not a good course if you are looking for a superficial learning experience that calls for little attention or involvement. You should come to each class prepared by completing and thinking about the reading and with each required writing assignment in hand, ready to engage instructors and students with your own reflections and ideas.

This course also contributes to the university’s effort to highlight issues of sustainability throughout its curriculum. Few questions are more central to the creation of a more sustainable society and economy than those centered on energy and environment, and this course attempts to make us more aware of the historical experience behind these questions and our efforts to address them in the 21st century.

EVALUATION: The final grade in this course is calculated on the basis of the following elements:

- **PORTFOLIO:**
 1. Personal Essay: 5%
 2. Element Essay: 5%
 3. Coal Essay: 10%
 4. Sustainability Essay: 20% [5% proposal; 15% final]
 5. Climate Essay: 5%
 6. Reading/Lecture Reflections: 15%
- **MID-TERM EXAM:** 10%
- **FINAL EXAM:** 20%
- **PARTICIPATION:** 10%

Books to be purchased:

Alfred W. Crosby, Children of the Sun (NY: W.W. Norton, 2006)

David E. Nye, Consuming Power; A Social History of American Energies (Cambridge:

MIT Press, 1999)
 Spencer R. Weart, The Discovery of Global Warming (Cambridge: Harvard Univ. Press, 2008)

Additional readings are available either as Internet-based links or in the Course Reserves section of the course ELMS site (marked [RES] on the schedule below).

SCHEDULE:

DATE	LECTURE TOPICS	READING	PORTFOLIO
Sep. 3	1) Introduction – Carbon	Hall, et al., “Hydrocarbons and the Evolution of Human Culture,” <u>Nature</u> (2003)[RES]	
Sep. 8-10	1) Energy and Environment in History – general points 2) Understanding Carbon	Michael Faraday: “Chemical History of a Candle,” lecture #6; find this on-line at: http://www.bartleby.com/30/12.html	PORTFOLIO 1
Sep. 15-17	1) Carbon and Humans in the Earth system 2) Foundations of technology	Crosby, 7-44; Nye 1-14	PORTFOLIO 2
Sep/ 22-24	1) Preindustrial energy forms and uses 2) The Industrial Revolution	Crosby, 45-62; Nye, 15-68	
Sep. 29 – Oct. 1	1) Coal 2) Efficiency and Dependency	Nye, 71-100; Crosby, 63-84; Greenberg, “Energy, Power, and Perceptions of Social Change in the Early Nineteenth Century,” <u>Amer. Hist. Rev.</u> (1990)[RES]	PORTFOLIO 3
Oct. 6-8	1) Internal Combustion 2) Transport & Energy	Crosby, 85-100; Nye, 103-128; "Transforming an Energy System: The Evolution of the Manufactured Gas Industry...." [RES]	

Oct. 13-15	1) Petroleum – American Beginnings 2) Petroleum – Exploitation & Monopoly	Diana and Roger Olien, “Why Big Bad Oil?” <u>OAH Magazine of History</u> (1996) [RES]	
Oct. 20-22	1) MID-TERM EXAM 2) Electricity	Crosby, 101-116	
Oct. 27-29	1) Petroleum – Internationalization 2) Consequences of the Petroleum System	Tugendhat & Hamilton, chaps. 5, 6 & 7 [RES]; Crosby, 101-116	PORTFOLIO 4 IDEAS
Nov. 3-5	1) Oil & war in the 20 th century 2) Triumph of the corporation	Nye, 131-185	PORTFOLIO 4 PROPOSAL
Nov. 10-12	1) Pollution – historical background 2) Pollution & crisis	Nye, 187-215; Melosi, “Energy and Environment in the United States,” <u>Environmental Review</u> (1987)[RES]	
Nov. 17-19	1) Energy Crises 2) The Politics of Scarcity	Nye, 217-247	
Nov. 24-26	1) Energy Alternatives- Nuclear Power 2) Energy Alternatives- Sustainability & Ecology	Crosby, 117-166	PORTFOLIO 4
Dec. 1-3	1) Inconvenient Truths – Energy use and climate 2) Discovery of Global Warming	Weart, 1-85	
Dec. 8-10	1) Doubt, Evidence, and Truth – Science and Debate 2) Carbon: Conclusions	Weart, 86-204	PORTFOLIO 5

Final Examination: Scheduled for 8:00 – 10:00 AM, Friday 12 December

Portfolio assignments:

The course “portfolio” is a key aspect of course work (and a primary constituent of final course grades). This term is used because you are asked not only to write a series of essays, described below, but also to keep these together in a binder or folder and to bring it to all classes. You should be prepared to contribute to class discussions – particularly in sections meetings – from your portfolio entries. These entries will be taken up from time to time, marked, and returned to you with suggestions for improvement. The final completed portfolio must be brought to the course final examination and turned in with that exam.

Remember to:

- Write carefully and grammatically, paying attention to syntax, word usage, and spelling.
- Make thorough use of high quality sources (using both the library and the Internet) and note completely these sources in your essays, following the style sheet provided here: http://www.lib.umd.edu/guides/citing_chicnotes.html (“Chicago Style Manual, Notes System”)
- Take note of and abide by the University Honor Code and ask questions if you are unsure about how to use materials appropriately.
- Read the assignment carefully and check after you have drafted a response to see that you meet all requirements and answer all questions.
- Bring your completed assignment to your weekly section meeting, prepared to present your response orally. Late assignments will be penalized.

PORTFOLIO ASSIGNMENTS (Due dates are noted by number in the course schedule—bring to that week’s section meeting):

1. **Personal essay:** Write a one to two page essay (250-400 wds) discussing your personal use of energy in a specific day during the period Sep. 1-6. Be as specific as possible in explaining energy sources you depend on and the particular applications of energy you are directly involved in. Explain what technologies are involved and what technological choices you made.
2. **Understanding Carbon:** (250-400 wds) Choose a chemical element other than carbon and explore the history of its discovery, its identification as an element, and its scientific, technical, and social significance. Compare your findings with the history of carbon. You must use at least two published (i.e.: non-website) sources.
3. **Industrialization and Coal:** (800-1200 wds) Choose a community (city, town, region) on the Eastern Seaboard of the U.S., from as far north as New York to as far south as Virginia, going as far west as West Virginia or Western Pennsylvania, and discuss the importance of coal – extraction, use, social effects, and/or environmental effects – for that community in both the 19th and the 20th centuries. You may choose to focus on manufactured (not natural) gas, as an alternative. Focus on how and why change has occurred

over time. Make every effort to use primary sources (this includes newspaper and other journalistic accounts).

4. **Energy Sustainability in the 20th Century:** (1500-2000 wds) One of the key themes of this course is the significance of energy choices. Your primary writing assignment requires you to select one of the key energy choices in 20th century history and to research and analyze several key aspects of it:
 - a. **What were the primary options available to energy users at the time this choice was made?**
 - b. **What were the primary influences that governed the selection of the most important of these options?**
 - c. **What were the most significant consequences of the choices, particularly for the long-term sustainability of the energy system?**
 - d. **What were the environmental effects, both short term and long term? How were these effects recognized and dealt with?**

It is important that you choose a topic that is specific enough to allow you to do meaningful research and analysis. Some effort will be made during your section meetings prior to topic selection to guide you in finding and doing preliminary research in feasible topics.

You will need to get approval for your topic by submitting a proposal two weeks before the assignment due date. At this stage, you may (with approval) join with one or two other students to develop a cooperative project of appropriate length. The proposal must demonstrate knowledge of relevant sources.

5. **Carbon, Science, and Climate:** (250-400 wds) Reflect on the story told in Spencer Weart's Discovery of Global Warming, drawing on one or two of the documents he makes available on his website.

Reading/Lecture Reflections: (abt. 150 wds each) Five times during the semester, you will be asked in lecture to spend some time writing a paragraph or two responding to the reading for that day or key lecture points. You will be asked to turn these in at the end of the lecture period. They will be used in that week's section meeting.

ACADEMIC POLICIES

Classroom decorum:

A university classroom is a privileged space – a place for meeting, discussion, presentation, and the consideration of important ideas. To be successful, some basic guidelines need to be agreed upon, largely in consideration of the needs of others. Most of this is common sense, so the first rule is to exercise your own common sense about the kinds of behaviors that are appropriate and those that should be avoided. It is helpful, however, to make a few things more explicit:

- Be in class on time. If you must come late, seat yourself promptly and quietly in a fashion that does not call attention to yourself. If your schedule makes this difficult, see the instructor at the beginning of the semester.

- Take notes. This may not seem to be a matter of decorum, but it is. If you have difficulty taking notes in a lecture class, you should seek advice from the instructor or the course section leader.
- Turn off **all** electronic communications. This is a simple rule and should be taken literally – that is, “turn off” means just that – not muting or using only text or any other form of maintaining communications. “All” should also be taken literally – no internet communications or cell phone communications are appropriate in the classroom, at any time. If this poses difficulties for you, you should discuss this with the instructor. The use of personal computers or tablets for note taking is encouraged, but does not entail the privilege of other computer usage or communication. You are expected to turn off wireless connections. Violations of this policy will disrupt the class and are subject to penalties.

Academic Integrity and Honor Pledge:

The University has approved a Code of Academic Integrity (<http://www.shc.umd.edu/code.html>) which prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, facilitating academic dishonesty, submitting fraudulent documents, and forging signatures. Plagiarism policy: all quotations taken from other authors, including from the Internet, must be indicated by quotation marks and referenced. Paraphrasing must be referenced as well.

The following University of Maryland Honor Pledge, approved by the University Senate, should be handwritten and signed on the front page of all papers, projects or other academic assignments submitted for evaluation in this course: “I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination.” Submissions via the course “Discussion Board” are made with the understanding that the student recognizes that the Honor Code applies to these, even if a signed copy does not accompany the submission.

Disabilities, Religious Holidays, Absences, Late Policy:

If you have a documented disability and require special accommodations, please contact the instructor within the first two weeks of class. It is particularly important that you inform the course Section Leader as soon as possible. Students who seek special accommodations due to disabilities must set up an appointment with the Disability Support Services in the Counseling Center (Shoemaker 0126), 301.314.7682. For more information, consult the DSS website: <http://www.counseling.umd.edu/DSS/>

Religious observance, athletic events, and other extra-curricular activities: Please inform the professor of any *intended absences* at the beginning of the semester. The University System of Maryland policy provides that students not be penalized because of observances of religious beliefs, but rather shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment missed due to individual participation in religious observances. It is your responsibility to inform the instructor at the beginning of the semester if you are going to miss any assignments due to religious observances. If I do

not hear from you during the first two weeks of class, I will assume that you will not be absent from class due to religious observances, athletic events, or any other scheduled activity.

Regular attendance and participation in this class is the best way to grasp the concepts and principles being discussed. However, in the event that a class must be missed due to an illness, the policy in this class is as follows:

For every medically necessary absence from class, a reasonable effort should be made to notify the instructor in advance of the class. If a student is absent more than 3 times, the instructor may require documentation signed by a health care professional.

If the University of Maryland officially delays or closes the university due to inclement weather, I will make an announcement via Canvas explaining how the lecture schedule will be adjusted. If class does not meet on a day in which an assignment is due, that assignment will be due during the next scheduled class period.

Writing Center:

<http://www.english.umd.edu/academics/writingcenter>

The University of Maryland Writing Center is located in 1205 Tawes Hall. At the Writing Center, trained consultants can assist you in thinking through how to construct your essays and provide feedback on the clarity of your writing and argumentation. Although some assistance can be provided on a walk-in basis, they strongly urge you to make an appointment before you stop by. Use their website to make your first contact.