

# HIST 007: THE LITTLE ICE AGE

## VOLCANOES AND CRISES IN THE PRE-MODERN WORLD



### Essential Information:

**Professor:** Dr. [Dagomar Degroot](#).

**Professor's email:** [dd865@georgetown.edu](mailto:dd865@georgetown.edu).

**Course Website:** [LIAModule.weebly.com](http://LIAModule.weebly.com).

Visit “Zoom Conferencing” in our Canvas page to access seminars and office hours.

### Course Description:

Human greenhouse gas emissions are today causing Earth's average temperature to rise more quickly than it has in the 300,000-year history of our species. Yet even before widespread industrialization set in, Earth's climate was never stable. Natural forces triggered preindustrial climate changes that may not have approached the magnitude of present-day warming, but still had profound consequences for societies the world over.



In this seven-week module in the Core Curriculum Pathway, we will explore the best-studied of these climate changes: the erratic cooling that lingered across much of the world from the thirteenth through the nineteenth centuries and is today called the “Little Ice Age.” We will discuss how volcanic eruptions and fluctuations in solar activity lowered Earth’s average temperature, and how scholars have tracked these changes through time. We will investigate the human consequences of the Little Ice Age, and find lessons for our warmer future. In the process, we will learn about the discipline of environmental history, which draws from both the sciences and the humanities to explore how humanity has altered, and been altered by, the nonhuman world.



### Course Goals:

Like other courses offered by the Department of History, this course will help you:

1. Gain a deeper appreciation of the nature and practice of history as a discipline, and as the study, based on evidence, of human experiences, interactions, and relationships as they change over time.

2. Learn that history does not consist of a simple succession of self-evident facts, and that evidence-based interpretation and analysis are central to all historical work.
3. Hone reading, writing, and oral communication skills.
4. Develop your capacity to think historically: to situate events and developments in their historical context for the purpose of critical analysis.
5. Expand your ability to engage with complex causal analysis, and to articulate arguments that integrate supporting evidence and analytical commentary.
6. View the world from perspectives other than your own.

This course in particular will also help you:

1. Appreciate the significance of, and deep context for, today's manmade climate change.
2. Understand complex relationships between climate change and humanity.
3. Broaden your appreciation for diverse scholarly disciplines, their distinct ways of deciphering the past, and how they interact.
4. Learn why scholars disagree, how they debate, and how scholarship comes to change.

### **Core Pathways:**

This module is part of the Core Pathways Initiative. As a part of the initiative, the course follows a 7.5-week A/B schedule that pairs with another course in the latter half of the semester. By enrolling in the module, you are also part of a larger learning community of faculty members, students, and other campus/community partners to engage with the complex factors and challenges presented by climate change.

The Core Pathway Initiative seeks to integrate differing perspectives and disciplines in a conversation around the many issues related to climate change. To foster that integration, and as part your participation in the initiative, over the course of each semester there will be four required integrative moments that bring together the entire Pathway (students and faculty) to bring to bear collective experiences on facets of the broader thematic topic of climate change.

The calendar on this syllabus (below) identifies the Integrative Days for the semester. Please keep these dates in mind. For more information on the Pathway or questions about the initiative, visit [www.corepathways.georgetown.edu](http://www.corepathways.georgetown.edu) or contact [corepathways@georgetown.edu](mailto:corepathways@georgetown.edu).



# Core Pathways

## Climate Change Spring 2021

Kickoff Dinner	First Day of Classes	Integrative Day (MANDATORY)
Last Day of Classes	No Classes	

WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Tuesday Session	1/26	2/2	2/9	2/16	2/23	3/2	3/9	3/16	3/23	3/30	4/6	4/13	4/20	4/27	5/4	5/11	TBD
Thursday Session	1/28	2/4	2/11	2/18	2/25	3/4	3/11	3/18	3/25	4/1	4/8	4/15	4/22	4/29	5/6		
	Module A Begins		Integrative Day		Module A Ends			Module B Begins		Spring Break			Module B Last Class		Study Days		Final Exercise
	Fall Kickoff Salon 530--645PM									Integrative Day							

### Breakdown:

Quizzes:	15%
Ship Logbook Essay:	25%
“Tipping Points” Article:	30%
Final Test:	30%

### Evaluation:

You will submit all assignments and complete all quizzes on Canvas. You will be able to access additional assignment resources on our course homepage.

#### Quizzes:

Through Canvas, you will complete three short quizzes, one every two weeks or so, that will test you on our readings and recorded class discussions. The quizzes will consist entirely of multiple-choice questions, and they should take you around 15-30 minutes to complete (although I will give you five days to finish them). Each quiz will be worth 5% of your final grade.

#### Ship Logbook Essay:

Write a five-page essay that uses peer-reviewed *secondary* sources – including those you’ll read in this course – to analyze several pages of a *primary* source. The source: **one** ship logbook written by English adventurer John Davis during a sixteenth-century expedition in search of a “Northwest Passage” through the Canadian Arctic to Asia. You can find the source on our class website.

Tell me:

1. What does that primary source tell us about weather?
2. Can we link that weather to climate change?
3. What does the source reveal about human responses to weather?
4. Ultimately, what does it suggest about relationships between climate change and human history?

Be sure to include a thesis. In other words, try to come up with an argument that can be debated, and explain how you will prove that argument. We will discuss all of this in class.

### “Tipping Points” Article:

Visit [ClimateTippingPoints.com](http://ClimateTippingPoints.com). Use the tools listed on the site to write a short (roughly 1,000-word) article that explains the consequences of *past* climate change (cooling or warming) in a local community, such as an American county. **Tell me which community you have in mind before writing your article!**

Your essay will inform your reader: 1) How climate change has affected a local environment; 2) How we know; and 3) How the local environmental consequences of climate change have influenced peoples’ lives.

You can bring in additional information from newspapers or scholarly articles. You should include maps or graphs that visualize the impact of climate change on a particular place, so long as you are able to explain how they were made. With your consent, I will edit the finest articles and publish them on our website. You may remain anonymous if you choose.

There are already many articles on the website that should give you an idea of what I’m looking forward. I encourage you to study a new location, one that isn’t yet on the website.

We will discuss how to write the article in class.

### Final Test:

This test consists of six short essay questions, of which you must answer three. You will have one day to complete it, and I will give you many more details in class.

### **Formatting your Essays:**

Make a title page! Your title page should have your assignment title in large, centered font. Your name, your class name, my name, and the date should be in a smaller font at the bottom right of your title page. **Note that your title page is not included in your page count.**

Your papers should be written in size 12, Times New Roman font. They should be double-spaced. You should use standard margins (one inch on all sides of the document). Number your pages (at the top right).

Use formal academic writing (no contractions or colloquialisms).

Cite all sources using Chicago Style formatting, which means that you need footnotes **and** a bibliography (**note that the bibliography does not add to your page count**). Click [here](#) to find out how you do this. You should always cite at the end of a quotation. Otherwise, include all citations in a footnote at the end of a paragraph. You do not need to cite every sentence. Your footnotes should be numbered sequentially and they should be single-spaced.

## **Grading Criteria:**

*Each of these criteria will be worth approximately a third of your grade:*

### Clarity:

Are you using words that appropriately and formally express your meaning? Are your points sourced correctly? Do your sentences precisely express your meaning, and are they grammatically correct? Is there a clear thesis that presents an argument and outlines how that argument will be defended? Is there a coherent organization that culminates in a conclusion that references the thesis?

### Research:

Are your secondary sources serious works of scholarship, and are they relevant to your argument? Do your primary sources illuminate the issue you are investigating, and to what extent? Are those primary sources relevant to your argument, and do you present them in the context of your secondary sources?

### Ideas:

How creative and nuanced are your arguments? Are you merely repeating the claims of other scholars, or are you evaluating them in the context of other arguments and concepts? To what extent can you develop fresh ideas?

## **Value of Letter Grades:**

A = 95-100

A- = 90-94

B+ = 87-89

B = 83-86

B- = 80-82

C+ = 77-79

C = 73-76

C- = 70-72

ETC.

## **Meaning of Letter Grades:**

*Courtesy of Professors Amy Leonard, Howard Spendelow, and Alan Karras:*

**A Outstanding.** We've looked and looked for errors and found perhaps a few lapses in grammar, but they are insignificant because you raised an interesting and important argument. You followed all the directions of the assignment and wrote in a clear and fluid manner. You cited your sources and garnered good evidence for your argument. Usually no more than 10% of students receive an A as a final grade.

**A- Excellent.** You show a superb mastery of the materials. Your paper has a clear argument but something is just a little bit off, and consistently so. You need some tightening of argumentation, for example, or you should have pushed your data that extra step. Or, there are some writing flaws in your paper or, your organization might not be perfect and obscures your otherwise fine argument. Nevertheless, an A- is a very good grade.

**B+ Very good.** You've clearly learned the material and there are no major errors. But your answer is lacking in originality, clarity, or sparkle. In some cases, this grade can be for a brilliant essay with significant and frequent writing flaws.

**B Good.** You have a solid argument but it is not fully developed. Your argument is plausible but you need more supporting evidence to make a convincing case. Or, you've given the right evidence but haven't articulated the argument. Or in an exam, for example, the chronology is confused or in a paper, there are problems with annotation and the use of sources. These are not fatal.

**B- Pretty good.** Your answer is solid, but incomplete. You end the paper or essay where you should begin it. Your essay has the right elements but they are in the wrong order. Your argument is likely missing something and might also have some problems in expression. I might have to strain to figure out what you want to say but once I do, it makes sense. This strain suggests that you could have corrected the problem with more attention to your argument.

**C+ Fair.** It's not obvious that you've done the readings and listened to the lectures. What you say might be true, but it is unclear since your argument has many writing problems and a reader has to work overtime to figure out what you mean. Your argument, though plausible, is not especially deep or insightful. The paper has errors and an imbalance between generalizations and evidence. There are problems with annotation that suggests attention has not been paid to the detail and mechanics of writing a paper.

**C Acceptable, but...**

- You might have grasped the basic idea, but have missed the main focal points of the questions and/or;
- There are omissions or disturbing errors in fact or your logic is flawed and/or;
- Although basically correct, your argument has no supporting evidence and/or;
- Your writing is obscuring your argument, your notes are inadequate, and your credibility is not so good either.

**C-** Still acceptable, but here are a greater number of problems and/or a fewer number of good points than needed to earn you a “C.” In other words, more of the C problems (mentioned above) are true in a C- paper.

**D+** Barely acceptable. There are serious errors, omissions, or inconsistencies here, but the light of understanding somehow, occasionally, flickers through.

**D** Just barely acceptable. Your answer is so vague that it's hard to find something good to say. Your writing problems also are pretty significant.

**D-** Passing. Be grateful your instructors are nice people with a great deal of patience. Perhaps you need to spend more time on your answers/papers next time! Asking for help might also be a good idea.

**F** Don't think so. There's not even enough here about which to be patient. At least you will get some credit for your effort, which is better than the zero you would have gotten for leaving the answer blank.

## **Important Notes:**

### Course Resources:

There are three resources you should familiarize yourself with in this course. The first is this syllabus. Before asking me a question about the course, please consult the syllabus.

The second resource is our Canvas page. On the page, you'll be able to submit your assignments and download any readings you can't access through our library resources. You'll also be able to complete quizzes and view our Zoom sessions.

The third resource in our course website (you can find a link on the first page of this syllabus). The website will host a regularly updated version of the syllabus, alongside resources for completing your major essay.

### Zoom House Rules:

Please not show up late to class. It detracts from your learning and disturbs your classmates. Ask questions by “raising your hand,” or pose them using our chat function.

### Submitting Assignments:

Assignments are due **at midnight on the due date**. Late assignments will receive a 5%/day penalty. I will not grade assignments that are more than one week late, unless you have negotiated an extension with me (see below).

### Extensions:



You may ask me for a short extension *before an assignment is due*. I will likely grant your request if you A) give me a convincing explanation for why you're late; B) give me a roadmap that outlines how you will complete your assignment; and C) propose a new due date.

I will only grant requests for an extension on or after the assignment due date in exceptional circumstances (a death in the family, for example, or a very serious illness). Be sure to contact your deans in case of absences, difficulties meeting due dates, and other problems.

### Missing Assignments:

If you fail to hand in an assignment, you will receive a zero for that assignment. You will not necessarily receive a message from me that asks about your missing assignment. I expect you to handle your obligations yourself.

### Attending Class and Participating:

This is an asynchronous course, which means that I do not require you to attend our Zoom sessions. I will record each session and publish them for later viewing on our Canvas page. You will also not receive a grade for participating in class, because of course such a grade would undermine the asynchronous delivery of the course.

However, I ask that you make a good faith effort to attend and participate. This course will be immeasurably enriched if enough students engage with our Zoom sessions. It will benefit everyone – including those who can't attend – if those who can attend show up, ask questions, and offer answers.

### Academic Honesty:

Plagiarism is not just about copying someone else's writing. *Any time* you present ideas without correctly citing them, you are committing plagiarism. This is the most serious intellectual offense you can commit in academia, so your professors – me included – take it very seriously.

It is **your** responsibility to familiarize yourself with the [Georgetown University Undergraduate Honor System](#). It is your professor's duty to refer academic misconduct – including plagiarism – to the Georgetown Honor Council. If the Council decides that you have plagiarized on an assignment, you will fail that assignment – and you may fail the course.

### Beyond the Course:

I am committed to supporting survivors of sexual misconduct, which includes relationship violence, sexual harassment and sexual assault. However, university policy requires faculty to report any disclosures about sexual misconduct to the Georgetown Title IX Coordinator, who directs the University's response to sexual misconduct.

Georgetown has a number of fully confidential professionals who provide support and assistance to survivors of sexual assault and other forms of sexual misconduct. To connect with those professionals – including to report an incident – and to review our university policies, you can visit: <https://sexualassault.georgetown.edu>.

### Schedule:

- *This schedule may be changed by your professor. You will usually have at least one week's notice.*
- *Please complete all weekly readings by Tuesday. All quizzes will be posted on Thursday, for completion by Tuesday.*

### Week 1: Introducing Climate History and Historical Climatology

January 26

January 28

#### Readings:

1. White, Sam. "Climate Change in Global Environmental History." In *A Companion to Global Environmental History*, edited by John McNeill and Erin Maulden, 394-410. London: Blackwell, 2012. Available as a free e-book through Georgetown library.
2. Brönnimann, Stefan et al., "Archives of Nature and Archives of Societies." In *The Palgrave Handbook of Climate History*, edited by Sam White, Christian Pfister, and Franz Mauelshagen, 27-36. (London: Palgrave Macmillan, 2018). Available as a free e-book through Georgetown library.
3. Pfister, Christian. "Evidence from the Archives of Societies: Documentary Evidence - Overview." In *The Palgrave Handbook of Climate History*, 37-47. Available as a free e-book through Georgetown library.

### Week 2: From Medieval Warmth to Little Ice Age

February 2

February 4: FIRST QUIZ

#### Readings:

1. Büntgen, Ulf, and Nicola Di Cosmo. "Climatic and environmental aspects of the Mongol withdrawal from Hungary in 1242 CE." *Scientific Reports* 6 (2016): 25606.
2. Pinke, Zsolt, László Ferenczi, Beatrix F. Romhányi, József Laszlovszky, and Stephen Pow. "Climate of doubt: A re-evaluation of Büntgen and Di Cosmo's environmental hypothesis for the Mongol withdrawal from Hungary, 1242 CE." *Scientific Reports* 7:1 (2017): 12695.
3. Guillet, Sébastien et al., "Climate response to the Samalas volcanic eruption in 1257 revealed by proxy records." *Nature Geoscience* 10:2 (2017): 123.

- Campbell, Bruce, "Global climates, the 1257 Mega-eruption of Samalas Volcano, Indonesia, and the English food crisis of 1258." *Transactions of the Royal Historical Society* 27 (2017): 87-121.

### **Week 3: Depopulation and Destruction: The 14<sup>th</sup> and 15<sup>th</sup> Centuries**

February 9

February 11

#### Readings:

- Campbell, Bruce. "Panzootics, Pandemics, and Climate Anomalies in the Fourteenth Century." *Beiträge zum Göttinger Umwelthistorischen Kolloquium 2011* (2010): 177-215. Available at: <https://univerlag.uni-goettingen.de/handle/3/isbn-978-3-86395-016-3> (click on "view document" and scroll to page 177).
- Ogilvie, Astrid, Lisa K. Barlow, and A. E. Jennings, "North Atlantic climate c. AD 1000: Millennial reflections on the Viking discoveries of Iceland, Greenland and North America." *Weather* 55:2 (2000): 34-45.
- McGovern, Thomas H. "Cows, harp seals, and churchbells: Adaptation and extinction in Norse Greenland." *Human Ecology* 8:3 (1980): 245-275.
- Dugmore, Andrew J. et al. "Cultural Adaptation, Compounding Vulnerabilities and Conjectures in Norse Greenland," *Proceedings of the National Academy of Sciences* 109 (2012): 3658–63.

### **Week 4: Global Crisis? The 16<sup>th</sup> and 17<sup>th</sup> Centuries**

February 16

February 18: INTEGRATIVE DAY AND SECOND QUIZ

#### Readings:

- Koch, Alexander et al., "Earth system impacts of the European arrival and Great Dying in the Americas after 1492." *Quaternary Science Reviews* 207 (2019): 13-36.
- Parker, Geoffrey. "Crisis and catastrophe: the global crisis of the seventeenth century reconsidered." *The American Historical Review* 113:4 (2008): 1053-1079.
- Huhtamaa, Heli, and Samuli Helama. "Distant impact: tropical volcanic eruptions and climate-driven agricultural crises in seventeenth-century Ostrobothnia, Finland." *Journal of Historical Geography* 57 (2017): 40-51.

### **Week 5: Climate Change and Conflict in the Little Ice Age**

February 23

February 25: NO CLASS. SHIP LOGBOOK ESSAY DUE

#### Readings:

1. Zhang, David D., Qing Pei, Christiane Fröhlich, and Tobias Ide. “4. Does climate change drive violence, conflict and human migration?”, in *Contemporary Climate Change Debates: A Student Primer* (2019), 51-62.
2. Degroot, Dagomar. “War of the Whales: Climate Change, Weather and Arctic Conflict in the Early Seventeenth Century.” *Environment and History* 26:4 (2020): 549-577.
3. Wickman, Thomas. “‘Winters Embittered with Hardships’: Severe Cold, Wabanaki Power, and English Adjustments, 1690–1710.” *William & Mary Quarterly* 72:1 (2015): 57-98.

## **Week 6: Enduring and Exploiting the Little Ice Age**

March 2

March 4: THIRD QUIZ

### Readings:

1. Degroot, Dagomar et al. “Towards a Rigorous Understanding of Societal Responses to Climate Change.” *Nature* (forthcoming).
2. De Souza, Jonas Gregorio et al., “Climate change and cultural resilience in late pre-Columbian Amazonia.” *Nature ecology & evolution* 3:7 (2019): 1007-1017.
3. Degroot, Dagomar. “Climate Change, Water, and the Golden Age of the Dutch Republic.” *Europe Now*. Available at: <https://www.europenowjournal.org/2018/12/10/climate-change-water-and-the-golden-age-of-the-dutch-republic>.
4. Xoplaki, Elena et al. “Modelling climate and societal resilience in the Eastern Mediterranean in the Last Millennium.” *Human Ecology* 46:3 (2018): 363-379.

## **Week 7: Learning From the Little Ice Age**

March 9: TIPPING POINTS ARTICLE DUE

March 11: IN-CLASS TEST

### Readings:

1. McNeill, J. R. “Can History Help Us with Global Warming?” In *Climatic Cataclysm: The Foreign Policy and National Security Implications of Climate Change*, edited by Kurt M. Campbell, 26-48. Washington, DC: Brookings Institution Press, 2008. I will provide a copy.
2. Ghosh, Amitav. “The Coming Climate Crisis: The Little Ice Age could offer a glimpse of our tumultuous future.” *Foreign Policy*. Available at: <https://foreignpolicy.com/gt-essay/the-coming-climate-crisis>.
3. Dagomar Degroot, “Little Ice Age Lessons.” *Aeon Magazine*. Available at: <https://aeon.co/essays/the-little-ice-age-is-a-history-of-resilience-and-surprises>.