

Fall 2020 - HUMA-389-01A-Atomic America

HUMA 389-01: Atomic America

Fall, 2020

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Virtual Office Hours: M, T, W, Th, & F from noon to 1pm (Mountain Time) via Zoom. Alternatively, you can send me a note via email to schedule an appointment by Zoom, Skype, phone, or whatever means are most accessible for you.

Course Description: The “Atomic America” course was originally designed and delivered by the historian Ferenc Morton Szasz at the University of New Mexico. The historian of science Luis Campos has since inherited and revitalized the course, which examines “the complex historical, political, environmental, cultural, and moral dimensions of the atomic age” (Campos, Spring 2018). Similarly, the tradition of teaching the course at New Mexico Tech has taken an historical approach to nuclear technology by examining the “cultural, social, political, and economic dimensions of atomic energy” (NMT Course Catalogue, 2009-2011). This course adopts the regional tradition of historical and cultural approaches to understanding nuclear development in the United States and its moral, political, economic, and environmental implications, but we will also nuance the traditional curriculum in four ways:

1. Through an interdisciplinary approach, we will read across genres and disciplines of history, anthropology, geography, geology, ecology, and environmental health sciences.
2. At an institute of mining and technology, it makes sense to focus on mining technology, among other applied sciences and engineering involved in the entire cradle-to-grave lifetime of nuclear things.
3. The acquisition of raw materials and the extraction of uranium ore resources is scarcely mentioned in the historical record of the atomic age, and virtually absent in Atomic America courses. In this course, we will foreground this area of ignorance by focusing on geologic memoirs that have kept rigorous records on how uranium mining in the U.S. Southwest contributed to the Manhattan Project and subsequent radioactive nation building.

4. A final contribution of our work to the Atomic America tradition is a focus on abandoned uranium mine (AUM) lands, the ongoing environmental health legacies of uranium mining and milling, and the interdisciplinary environmental and biomedical sciences and engineering involved in monitoring and managing uranium mine waste and mill tailings.

The course is distributed into two parts: **Part I is a literature review**, which is reading, writing, and communication intensive, and includes peer-to-peer, asynchronous collaborative group work and discussion. Annotations will be written for each assigned author, which will serve as points of discussion with your peers and will culminate in an annotated bibliography. **Part II is research intensive**, resulting in two collaborative case studies, through the compilation, curation, and archiving of data in critical and creative ways. Detailed instructions for this process will be provided below and will be centered around students' academic and professional interests, and carried out through project-based and place-based research.

Mode of Instruction: This course will be entirely online through asynchronous delivery—meaning there are no set times during the day that you are expected to be “in class” synchronously with your peers and instructor.

Pre-requisites/Co-requisites: The only pre-requisite is junior standing or having passed the second course in the CLASS freshman writing sequence and a freshman history class.

Place in Curriculum: This class satisfies the requirements of a Humanities course in the New Mexico General Education Curriculum and focuses on the following Essential Skills: Critical Thinking; Information and Digital Literacy; Personal and Social Responsibility

For more on the New Mexico Tech General Education Curriculum and how these essential skills are assessed, please visit the following website: <https://www.nmt.edu/academicaffairs/assessment/gened.php> (Links to an external site.).

For more on the New Mexico General Education Requirements, please visit the following page in the NM Higher Education Department website: https://hed.state.nm.us/resources-for-schools/public_schools/general-education (Links to an external site.).

Course Learning Outcomes:

1. Advanced literacy in the regional tradition of historical and cultural studies of nuclear technologies and development in the United States, and the role of New Mexico in particular, as well as the complex moral, political, economic, and environmental implications
2. Identify the main arguments and perspectives of authors across genres and disciplines, in addition to analyzing different stakeholder perspectives, statements, and actions associated with nuclear issues
3. Rapidly identify clusters of key research questions and locate sites of information for answering these questions
4. Work collaboratively to rapidly produce case study research using diverse digital tools to support research and collaboration

Program Learning

Outcomes: <https://www.nmt.edu/academics/class/classoutcomes.php> (Links to an external site.)

Course Requirements: This course requires a substantial amount of reading and writing, as well as a commitment to strong virtual communication skills. Students are expected to read two articles or book chapters a week and will compile **annotations** for each assigned reading using the Annotation Template below, which will form the basis for **an annotated bibliography** (3-4 pages) submitted through the Assignments tab on Canvas. All scheduled readings will be available on Canvas via the Modules function. Based on your annotations, you will also **post a single 200-word response** that captures your interpretations of the readings each week by **Wednesday** using the Discussion tab on Canvas. You will then *respectfully* respond to your peers' posts every **Friday**, which together will make up 40% of your grade. No late posts will be accepted as they will disrupt the timeliness of our asynchronous communications and my grading cycle. Additionally, students will **collaboratively design two case studies. The final product from each of the two case studies will be an individually authored two-page report**, double-spaced with one-inch margins, 12-pt Times New Roman font. Please format according to [Chicago Manual of Style](#) (Links to an external site.). Submit reports through the Assignments function in Canvas, each worth 20% of your final grade. No late papers will be accepted, unless there are exceptional circumstances as stipulated by the college.

Annotation Template

1. Copy and paste bibliographic citation in your notes for convenience and later incorporation in the annotated bibliography. For example:

York, Richard and Eugene A. Rosa. 2003. Key Challenges to Ecological Modernization Theory: Institutional Efficacy, Case Study Evidence, Units of Analysis, and the Pace of Eco-Efficiency. *Organization and Environment* 16(3):273-288.

2. What is the main argument or thesis of the text?
3. What evidence is presented to support their argument? What do they treat as “data”?
4. What were the methods for collecting the data?
5. What concepts or key terms are introduced to make the argument?
6. Copy and paste three important quotes in your notes.

Course Schedule:

Part I: A Survey of the Literature on Atomic America

Annotations will form the basis for posts that will be submitted on Wednesday. Students will respond to each other’s posts by Friday.

9/21: Atomic America

- Szasz, Ferenc. 1984. *The Day the Sun Rose Twice*. Introduction (3-6), Chapter 1 (7-26)

9/28: ‘Radium Craze’

- Campos, Luis. 2015. *Radium and the Secret of Life*. Introduction (1-10) and Chapter 1 (11-55)

10/5: Geology and Technology of the ‘Grants Uranium District’

- Chenoweth, William. 1985. Raw Materials Activities of the Manhattan Project in New Mexico
- McLemore, Virginia. 2010. The Grants Uranium District, New Mexico: Update on Source, Deposition, and Exploration

10/12: The Legacy of Uranium Mining

- Johnston, Barbara Rose. 2007. *Half-Lives and Half-Truths: Confronting the Radioactive Legacies of the Cold War*. Chapter 1 (1-18), Chapter 5 (97-115)

10/19: Wastelands

- Voyles, Traci. 2015. *Wastelanding: Legacies of Uranium in Navajo Country*. Chapter 2 (55-86), Chapter 3 (87-115)

***Case Study 1: The Grants Uranium Mining District (DUE Friday 10/30)**

11/2: The Manhattan Project and Los Alamos National Labs (LANL)

- Masco, Joseph. 2006. *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*. Chapter 3 “Econationalisms” (99-159)

11/9: UNM METALS Superfund Research

- Lewis, J., Gonzalez, M., Burnette, C., Benally, M., Seanez, P., Shuey, C., Nez, H., Nez, C., Nez, S., 2015. Environmental exposures to metals in native communities and implications for child development: basis for the Navajo birth cohort study. *Soc. Work. Disabil. Rehabil.* 14, 245–269
- Lewis, J., Hoover, J., MacKenzie, D. Mining and Environmental Health Disparities in Native American Communities. *Curr Envir Health Rpt*

11/16: UNM METALS Superfund Research

- Blake, Johanna et al. 2015. Uranium mobility and accumulation along the Rio Paguante, Jackpile Mine in Laguna Pueblo, NM. *Environmental Science: Processes and Impacts*
- De Pree, Thomas. 2020. The politics of baselining in the Grants Uranium Mining District of Northwestern New Mexico. *Journal of Environmental Management*

***Annotated Bibliography (DUE Friday 11/13)**

***Case Study 2: White Sands & Chupadera Mesa (DUE Friday 12/4)**

Part II: Collaborative Case Studies on Nuclear ‘Sacrifice Zones’

For the second part of the course, you will collaborate with your peers by collecting and cross-analyzing data for two case studies. The original material for each case study will be combined in one collective Google Doc nested in the Collaborations tab in Canvas. Each student will contribute **at least two unique “artifacts” per case study** and contribute **at least 200 words in typed** response to any of the artifacts collected for the case study. The Google Doc will track our contributions. During this collaborative process, students will begin to write their **individual two-page double-spaced reports**, which will be submitted via the Assignments function in Canvas on the following dates: **Case Study 1 (DUE: 10/30); Case**

Study 2 (DUE: 12/4). Notice that Case Study 1 is due during our reading cycle in Part I in order to balance the coursework for student manageability. I will post examples of other case studies for us to think about as we begin to design our collaborative case studies, in addition to instructions for the two-page report.

What count as “data” for our purposes are text, image, audio, video, and other media that range from news reports, to articles in scientific journals, to hyperlinks for websites, and online public fora. Think creatively and ethically about what we can consider “data” or “artifacts” in online environments. In this part of the course, you will essentially train in the digital humanities as anthropologists and ethnographers of “virtual worlds” (Boellstorf et al. 2012) by rapidly compiling qualitative case studies. In addition to the collaborating on a Google Doc in Canvas, we are also invited to use the Platform for Experimental Collaborative Ethnography (PECE; pronounced “peace”) to archive digital artifacts and develop analytic frameworks (lists of questions) for cross analyzing the artifacts. Students are invited to publish their finished case studies on the Disaster Science and Technology Studies (STS) Research Network through PECE, a platform for sharing work with other researchers and affected communities. Additionally, students will be given the opportunity to broadcast the case studies they archive on PECE through the website for the University of New Mexico (UNM) Metal Exposure and Toxicity Assessment on Tribal Lands in the Southwest (METALS) Superfund Research Program Center, as part of their goal to reduce environmental health risks from nuclear legacies in New Mexico.

Case study analysis is used in many different kinds of research so the methods and analytic skills you learn in this course are likely to be useful in your later work. In case study analysis, a key challenge is to develop a **set of questions** that can be used to examine different cases. See examples of case study questions below. Please provide responses to these questions as you deem adequate and think with these questions to generate additional research questions specific to your case study.

Case Study Questions

1. What is the **setting** of this case?
2. What **environmental threats** (from worst case scenarios, pollution and climate change) are there in this setting?
3. What **intersecting factors** -- social, cultural, economic, political, technological, ecological -- contribute to environmental health vulnerability and injustice in this setting?
4. Who are **stakeholders**, what are their characteristics, and what are their perceptions of the problems?
5. What have different stakeholder groups done (or not done) in **response** to the problems in this case?

6. How have **big media outlets** and **NGOs (nongovernment organizations)** covered environmental problems in this setting?
7. What **local actions** would reduce environmental vulnerability and injustice in this setting?
8. What **extra-local actions** (at state, national or international levels) would reduce environmental vulnerability and injustice in this setting and similar settings?
9. What kinds of **data and research** would be useful in efforts to characterize and address environmental threats in this setting and similar settings?
10. What, in your view, is **ethically wrong** or unjust in this case?

Grading:

- Annotations & Annotated Bibliography (3-4 pages; **due 11/13**) 40% of total grade
 - Discussion: Eight (N=8) 200-word Posts & Responses
- Case Study #1 (collaboration + 2-page report; **due 10/30**) 30%
- Case Study #2 (collaboration + 2-page report; **due 12/04**) 30%

Academic Honesty: New Mexico Tech's Academic Honesty Policy for undergraduate and graduate students is found in the student handbook, which can be found at: <https://www.nmt.edu/studentlife/dos/NMT%20Student%20Handbook%202019-20.pdf> (Links to an external site.). You are responsible for knowing, understanding, and following this policy.

Reasonable Accommodations: New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office for Disability Services (ODS) as soon as possible. To schedule an appointment, please call 835-6209, or email disability@nmt.edu.

Counseling Services: New Mexico Tech offers individual and couples counseling, safety assessments, crisis intervention and consultations through The Counseling Center. These confidential services are provided free of charge by licensed professionals. For more information, please call 835-6619, email counseling@nmt.edu or complete an Intake Form on our website at <https://www.nmt.edu/cds/> (Links to an external site.). All services are provided via phone or Zoom during the Covid-19 pandemic.

Respect Statement: New Mexico Tech supports freedom of expression within the parameters of a respectful learning environment. As stated in the New Mexico Tech Guide to Conduct and Citizenship: “New Mexico Tech’s primary purpose is education, which includes teaching, research, discussion, learning, and service. An atmosphere of free and open inquiry is essential to the pursuit of education. Tech seeks to protect academic freedom and build on individual responsibility to create and maintain an academic atmosphere that is a purposeful, just, open, disciplined, and caring community.”

Title IX Reporting: Sexual misconduct, sexual violence and other forms of sexual misconduct and gender-based discrimination are contrary to the University’s mission and core values, violate university policies, and may also violate state and federal law (Title IX). Faculty members are considered “Responsible Employees” and are required to report incidents of these prohibited behaviors. Any such reports should be directed to Tech’s Title IX Coordinator (Dr. Peter Phaiah, 20D Brown Hall, 575-835-5187, titleixcoordinator@nmt.edu). Please visit Tech’s Title IX Website

(www.nmt.edu/titleix) for additional information and resources.

Course Summary:

Date	Details
Wed Sep 23, 2020	Assignment 9/21 - Atomic America: Szasz, Ferenc. 1984. The Day the Sun Rose Twice. Introduction (3-6), Chapter 1 (7-26)
Wed Sep 30, 2020	Assignment 9/28 - Radium Craze: Campos, Luis. 2015. Radium and the Secret of Life. Introduction (1-10) and Chapter 1 (11-55)
Wed Oct 7, 2020	Assignment 10/5 - Geology and Technology of the ‘Grants Uranium District’
Wed Oct 14, 2020	Assignment 10/12: The Legacy of Uranium Mining
Wed Oct 21, 2020	Assignment 10/19: Wastelanding
Fri Oct 30, 2020	Assignment Individual Two-Page Report for Case Study 1 (DUE 10/30)

Date	Details
Wed Nov 4, 2020	Assignment 11/2: The Manhattan Project and Los Alamos National Labs (LANL)
Wed Nov 11, 2020	Assignment 11/9 - UNM METALS Superfund Research
Fri Nov 20, 2020	Assignment 11/16: UNM METALS Superfund Research Part II
	Assignment Annotated Bibliography
Fri Dec 4, 2020	Assignment Individual Two-Page Report for Case Study 2 (DUE 12/4)