South Dakota School of Mines & Technology
POLS 492: The Politics of Nature & Technology, Fall 2024

I.   Basic Information

Instructor: Dr. Mary E. Witlacil (she/her/hers)

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Course Description

How do we make sense of the relationship between technology and nature when the politics of nature and technology are often at odds with one another? For environmentalists, technological innovation is a dual edged sword; it has the potential to solve environmental problems, but it can also cause widespread environmental damage. In this class you will learn several political approaches for thinking about the relationship between nature and technology including techno-optimism, ecological modernization, degrowth, eco-managerialism, eco-authoritarianism, ecofeminism, new materialism, and traditional ecological knowledge. Topics covered may include geo-engineering, critical minerals, artificial intelligence, the nascent space race, pollution, renewables, plastics, etc.

II.   Tentative Course Schedule

The weekly reading list is subject to change. Whenever changes must be made to the reading list, these will be done with at least one week notice.

All readings can be found on D2L or in:
- Holly Jean Buck, *After Geoengineering: Climate Tragedy, Repair, and Restoration* (London: Verso Books, 2019).

Section I. Orienting the Anthropocene

The "Anthropocene" refers to a new geological era (subsequent to the *Holocene*) in which humans (*which humans?*) have so thoroughly altered the planet as to leave a mark in the geologic or stratigraphic record. In this era, humans have moved from being part of nature and using tools to survive, to using tools and technology to control and dominate nature. In this section, we will study different approaches to understanding the relationship between politics, nature, and technology.

Orienting Questions for Section I:
1. How do different theoretical approaches understand and define the relationship between politics, nature, and technology? And how do they conceptualize the problem at the core of this relationship?
2. How might your social position (geography, class, race/ethnicity, gender, ability) alter how you think about this relationship?
3. How might these theoretical approaches inform political and/or technical solutions to environmental problems?

Week 1: Introductions & Conceptual Foundations
- Monday August 26:

- o Syllabus and Introduction to the Course
- Wednesday August 28: **What is politics?**
  - William Connolly, "Essentially Contested Concepts," in *The Terms of Political Discourse* (Princeton University Press, 1993) pp. 9-44.
  - Samuel Chambers, "Politics," in *The Lessons of Rancière* (Oxford University Press, 2013), pp. 38-64.
- Friday August 30: **What is political theory?**
  - Sheldon Wolin, "Political Philosophy & Philosophy: Sections I-VII," in *Politics and Vision* (Princeton University Press 2004) pp. 1-21.
  - Wendy Brown, 'At the Edge: The Future of Political Theory,' *Edgework: Critical Essays on Knowledge and Politics,* (Princeton University Press, 2009) pp. 60-82
  - o **Recommended:**
    - Richard Ashcraft, "Political Theory and the Problem of Ideology," *The Journal of Politics* 42, No. 4: 1980, pp. 687-705

Week 2: NO CLASS
- Monday September 2: **Labor Day:** No Class
- Wednesday September 4: **APSA:** No Class
- Friday September 6: **APSA:** No Class

Week 3: Conceptual Foundations: What is nature?
- Monday September 9: **Conceptualizing Nature**
  - Raymond Williams, "Nature," *Keywords: A Vocabulary of Culture and Society.* New York: Oxford University Press, 2015, pp. 164-169.
  - Kate Soper, "Introduction" in *What is Nature: Culture, Politics, and the Non-Human.* Oxford: Blackwell Press, 1998, pp. 1-14.
- Wednesday September 11: **Nature Beyond "Nature"**
  - William Cronon, "The Trouble with Wilderness; or, Getting Back to the Wrong Nature," 1995, pp. 1-17.
  - Kate Soper, "Discourses of Nature" in *What is Nature: Culture, Politics, and the Non-Human.* Oxford: Blackwell Press, 1998, pp. 15-36.
  - o **Recommended:**
    - Noel Castree, "Strange Natures, in *Nature,* New York: Routledge, 2005, pp. 1-44
- Friday September 13: **Grasping the Anthropocene**
  - Robert Davis, "Inventing the Present: Historical Roots of the Anthropocene." *Earth Sciences History* 30, No. 1 (2011): pp. 63-84.
  - Paul Wapner, "The Changing Nature of Nature: Environmental Politics in the Anthropocene." *Global Environmental Politics* 14, No. 4 (2014): pp. 36-54.
  - o **Recommended:**
    - Timothy Luke, "Introduction: Political Critiques of the Anthropocene." *Telos* 172 (Fall 2015): pp. 3-14.

Week 4: Conceptual Foundations: What is technology?
- Monday September 16: **Conceptualizing Technology**

Raymond Williams, "Technology, *Keywords: A Vocabulary of Culture and Society*. (New York: Oxford University Press, 2015): p. 249.

- Eric Schatzberg, "Introduction: An Odd Concept," and "Conclusion: *Technology* as Keyword in the 1960s and Beyond," in *Technology: Critical History of a Concept* (University of Chicago Press, 2018): pp. 1-5; 214-234.
- Francesca Bray and Barbara Hahn, "'The Goddess Technology is a polyglot': a critical review of Eric Schatzberg, Technology: critical history of a concept," *History and Technology,* 38, No. 4 (2022): pp. 275-279; 293-302 (Skim case studies 279-293).

- Wednesday September 18: **Critical Theory and Technology**
  - Andrew Feenberg, "Ten Paradoxes of Technology," in *Technology, Modernity, and Democracy,* (Rowman and Littlefield, 2018): pp. 37-54.
  - Lewis Mumford, "Technics and the Nature of Man," in *Technology and Culture* 7, No. 3: (1966), pp. 303-317.
- Friday September 20: **M-Day!!**
  - **Friday Activity 1: Writing Activity & Group Discussion**

Week 5: Theorizing Nature & Politics: Ecological Modernization & Techno-Optimism

- Monday September 23: **Ecological Modernization**
  - Arthur P J Mol, Gert Spaargaren, and David A. Sonnenfeld, "Ecological Modernization Theory: Taking Stock, Moving Forward," *Routledge International Handbook of Social and Environmental Change*, (Routledge, 2014): pp. 15–30.
  - Martin Jänicke and Stefan Lindemann, "Governing Environmental Innovations," *Environmental Politics* 19, no. 1 (February 2010): pp. 127–41.
  - **Recommended:**
    - Rosalind Warner, "Ecological Modernisation Theory: Towards a Critical Ecopolitics of Change?" *Environmental Politics* 19, no. 4 (2010): pp. 538–56
    - John Bellamy Foster, "The Planetary Rift and the New Human Exemptionalism: A Political-Economic Critique of Ecological Modernization Theory," *Organization and Environment,* 25, No. 3 (2012): pp. 211-237.
- Wednesday September 25: **Techno-Optimism and Effective Acceleration (e/Acc)**
  - John Danaher, "Techno-Optimism: An Analysis, an Evaluation and a Modest Defence." *Philosophy & Technology* 35, no. 2 (June 2022): pp. 1-29.
  - Peter Königs, "What Is Techno-Optimism?" *Philosophy & Technology* 35, no. 3 (September 2022): pp. 1-5.
  - Marc Andreesen, "The Techno-Optimist Manifesto," (Online: 2023). [Web](). (Skim).
  - **Recommended:**
    - Samuel Alexander and Brendan Gleeson, "Light Green Illusions and the 'Blind Field' of Techno-Optimism," in *Degrowth in the Suburbs*, by Samuel Alexander and Brendan Gleeson (Singapore: Springer Nature Singapore, 2019): pp. 59–86.
- Friday September 27:
  - **Friday Activity 2**

Week 6: Theorizing Nature & Politics: Degrowth & Eco-Marxism

- Monday September 30: **Degrowth**
  - Robert Pollin, "Degrowth vs a Green New Deal," in *Who Will Build the Ark? Debates on Climate Strategy from New Left Review* (Verso Books, 2023): pp. 67-87.

- Kohei Saito, "The Limits of Green Keynesianism," in *Slow Down: The Degrowth Manifesto,* trans. Brian Bergstrom (Astra House, 2024): pp. 30-58.
  - o **Recommended:**
    - Camilla Royle, "Marx Against Techno-Optimism," *Contributions to Political Economy*, 43 (2024): pp. 94-112.
- Wednesday October 2: **Eco-Marxism**
  - Neil Smith, "Nature as Accumulation Strategy, *Socialist Register* (2007): pp. 16-36.
  - Alyssa Battistoni, "Bringing in the Work of Nature: From Natural Capital to Hybrid Labor," *Political Theory* 45, No. 1 (2017), pp. 5-31.
  - o **Recommended:**
    - Jason Moore, and Raj Patel, "Cheap Nature," in *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet* (University of California Press: 2019): pp. 12-31.
- Friday October 4:
  - o **Friday Activity 3**

Week 7: Theorizing Nature & Politics: Ecofeminism & Traditional Ecological Knowledge
- Monday October 7: **Ecofeminism**
  - Carolyn Merchant, "Chapter 1: Nature as Female," in *The Death of Nature* (Harper Collins, 1990): pp. 1-41.
  - Jennifer L. Lawrence, et al., "Feminist approaches to environmental politics," *Contemporary Political Theory,* 2024, pp. 1-17.
  - o **Recommended:**
    - Tina Sikka, "Technofeminism and Ecofeminism: An Analysis of Geoengineering Research," in *Ecofeminism: In Dialogue,* edited by Douglas Vakoch, and Sam Mickey (Lexington Books, 2018): pp. 107-128.
- Wednesday October 9: **Traditional Ecological Knowledge & Decolonial Ecologies**
  - Robin Wall Kimmerer, "Maple Nation," "The Sacred and the Superfund," "People of Corn, People of Light," "Defeating Windigo," and "Epilogue," in *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Milkweed Editions, 2015).
  - Leanne Betasamosake Simpson, "Land as Pedagogy" in *As We Have Always Done: Indigenous Freedom Through Radical Resistance* (University of Minnesota Press, 2017) pp. 145-174
  - Kyle Powys Whyte, "Way Beyond the Lifeboat: An Indigenous Allegory of Climate Justice," in *Climate Futures: Reimagining Global Climate Justice,* edited by Kum-Kum Bhavnani, John Foran, Priya A. Kurian, Debashish Munshi (Zed Books, 2019), pp. 11-20.
  - o **Recommended:**
    - Kyle Powys Whyte, "Settler Colonialism, Ecology, and Environmental Injustice," *Environment and Society: Advances in Research* 9 (2018), pp. 125–144.
- Friday October 11
  - o **Friday Activity 4**

Section II.
Rough Seas in the Anthropocene: Nature & Technology in Crisis

From fire, clothing, and shelter to air conditioning, combustion engines, and computers humans have developed technologies to protect ourselves from the harshest aspects of the natural world and to make life easier on planet earth. Unfortunately, many forms of technology developed since the Industrial Revolution exact a heavy price on the planet. Throughout this section we will learn about several environmental consequences of technologies relied upon by humans, as well as how some humans are trying to avoid the consequences of their actions at all costs.

Orienting questions:

1. Technologies can make life easier, safer, and more efficient, but technological advancements exact a heavy toll on the environment. Would you eliminate particular technological advancements if you could? If so, what would they be?
2. If you had resources and political support, how would solve the problems of pollution, plastics, AI server farms, or eWaste?
3. Who has agency and responsibility for addressing environmental degradation and climate change? Who has the power to tackle these problems or obstruct their solutions?

Week 8: Pollution

- Monday October 14
  - o **No Classes: Indigenous People's Day**
- Wednesday October 16: **Pollution is Colonialism**
    - ▪ Max Liboiron, "Introduction," *Pollution is Colonialism* (Durham: Duke University Press, 2021), pp. 1-38.
- Friday October 18: **Pollution is Colonialism**
  - o **Readings**:
    - ▪ Max Liboiron, "Land, Nature, Resource, Property," *Pollution is Colonialism* (Durham: Duke University Press, 2021), pp. 39-81.

Week 9: Plastic

- Monday October 21: **Plastics**
    - ▪ Rebecca Altman, "From War Machine to Supermarket Staple: A History of the Plastic Bag," *Orion Magazine* (May, 2024), Online.
    - ▪ Susan Freinkel, "Improving on Natures," in *Plastic: A Toxic Love Story* (Mariner Books, 2011): 12-27.
    - ▪ Alice Mah, "Introduction," *Petrochemical Planet: Multiscalar Battles of Industrial Transformation* (Durham: Duke University Press, 2023), pp. 1-24.
  - o **Recommended**:
    - ▪ Davis Allen, Chelsea Linsley, Naomi Spoelman, Alyssa Johl, "Sections I-V" in *The Fraud of Plastic Recycling*, The Center for Climate Integrity (2024), pp. 1-30.
- Wednesday October 23: **Wasteocene or Petrochemical Planet?**
    - ▪ Marco Armiero, "The Case for the Wasteocene," *Environmental History,* 26 (2021): pp. 425-430.
    - ▪ Alice Mah, "The Competing Stakes of the Planetary Petrochemical Crisis," *Petrochemical Planet: Multiscalar Battles of Industrial Transformation* (Durham: Duke University Press, 2023), pp. 95-118.
    - ▪ Max Liboiron, "Plastics in the Gut," *Orion Magazine* (November, 2020), Online.
- Friday October 25
  - o **Friday Activity 5**

Week 10: Denial in Action: Silicone Valley, California Forever, & Escaping to Space

- **Schedule meeting with Dr. Witlacil**
- Monday October 28: **Tech-Utopias**
    - Richard Tutton, "Sociotechnical Imaginaries as Techno-Optimism: Examining Outer Space Utopias of Silicon Valley," *Science as Culture* 30, No. 3: 2021, pp. 416-439.
    - Conor Dougherty, "Behind the Plan to Build a City from Scratch in Solano County," *The New York Times,* January 24, 2024. Online.
- Wednesday October 30: **Escape to Space Race**
    - Sean Parson, and Emily Ray, "*Caelum Nullius*: Outer space and the colonial logic of property rights," Forthcoming in *Theory & Event,* 2025: pp. 1-38.
    - Adam Greenfield, "Cryptocurrency: The Computational Guarantee of Value," in *Radical Technologies: The Design of Everyday Life* (London, Verso Books: 2017): pp. 115-144.
    - o **Recommended:**
        - Sam Haselby, "Philosopher of the Apocalypse," *Aeon,* May 17, 2022. Online.
- Friday November 1
    - o **Friday Activity 6**
        - **Guest Lecture**: **Dr. Sean Parson**, Associate Professor of Political Science at Northern Arizona University

Week 11: Artificial Intelligence

- o Monday November 4: **Artificial Intelligence** (Readings Subject to Change)
    - Matteo Pasquinelli, "The Material Tools of Algorithmic Thinking," *The Eye of the Master: A Social of Artificial Intelligence* (Verso Books, 2023): pp. 23-48.
    - Peter Dauvergne, "The globalization of artificial intelligence: consequences for the politics of environmentalism," *Globalizations* 18, No. 2 (2021): pp. 285-299.
    - o **Recommended:**
        - Peter Dauvergne, "Introduction: Genius or Madness," *AI in the Wild: Sustainability in the Age of Artificial Intelligence* (MIT Press, 2020): pp. 1-21.
- Wednesday November 6: **Artificial Intelligence (Continued)**
    - Benedetta Brevini, "Black boxes, not green: Mythologizing artificial intelligence and omitting the environment," *Big Data & Society* (2020) pp. 1-5.
    - Kate Crawford and Vladan Joler (2018), "Anatomy of an AI System: The Amazon Echo as an Anatomical Map of Human Labor, Data, and Planetary Resources," *AI Now Institute and Share Lab*, https://anatomyof.ai
    - Ira Allen, "Why Panic Now?," in *Panic Now? Tools for Humanizing,* (University of Tennessee Press, 2024): pp. 33-47 (focus on this, as it deals with AI), 48-72 (skim the remainder of the chapter)
- Friday November 8
    - o **Friday Activity 7**

Section III.
Navigating the Anthropocene: Control or Liberation?

Now that we have surveyed some of the damages wrought by technology, this section will explore possible solutions (as well as the consequences of these proposed solutions). We will first explore geoengineering, which is being put forth as one possible solution to climate change. Geoengineering seeks to use experimental methods to reduce the amount of CO_2 emitted into the atmosphere. Some techniques include stratospheric aerosol injection (which would whiten the sky), and carbon capture and storage (which scientists at SD Mines have been studying). Critics of geoengineering, such as Elizabeth Kolbert, have noted that the underlying assumption of geoengineering is that "If control is the problem, then, by the logic of the Anthropocene, still more control *must* be the solution" (Kolbert 2022, 32). If more attempts to control the environment result in even more problems for future humans, then what other solutions are out there? One possibility is what Sharon Krause refers to as "eco-emancipation." In this section we will explore both of these options, and another possible topic of your choice.

Orienting Questions:

1. Nearly every climate scientist, scholar, and advocate would agree that Net-Zero carbon emissions is the goal, but with weak international leadership and weak policy, achieving the goal of Net-Zero appears to move farther and farther into the future. Achieving Net-Zero will require massive political, social, and economic changes. What do you envision as possible avenues to Net-Zero? In other words: what needs to change to achieve Net-Zero?
2. Is geoengineering an unalloyed good? Why or why not?
3. Do any of the theories from the earlier part of the course help us better understand solutions to the climate and ecological crises?

Week 12: Geo-engineering
- o Monday November 11: **After Geoengineering**
   - ▪ Holly Jean Buck, "Introduction," *After Geoengineering: Climate Tragedy, Repair, and Restoration* (London: Verso Books, 2019): pp 1-52.
   - o **Recommended:**
     - ▪ Kyle Powys Whyte, Interviewed by Holly Jean Buck, "Geoengineering and Indigenous Climate Justice," in *Has It Come to This? The Promises and Perils of Geoengineering on the Brink*, edited by J.P. Sapinski, Holly Jean Buck, and Andreas Malm (Rutgers University Press, 2020): pp. 69-81.
- • Wednesday November 13: **After Geoengineering**
   - ▪ Holly Jean Buck, "Part I: Cultivation," *After Geoengineering: Climate Tragedy, Repair, and Restoration* (London: Verso Books, 2019): pp 53-118.
- • Friday November 15
   - o **Friday Activity 8**

Week 13: Geo-engineering
- o Monday November 18: **After Geoengineering**
   - ▪ Holly Jean Buck, "Part II: Burial," *After Geoengineering: Climate Tragedy, Repair, and Restoration* (London: Verso Books, 2019): pp 119-158.
- • Wednesday November 20: **After Geoengineering**

- Holly Jean Buck, "Part III: The After-Zero Society," *After Geoengineering: Climate Tragedy, Repair, and Restoration* (London: Verso Books, 2019): pp 159-210.
- Friday November 22: **APT - No Class**

Week 14: Flex Week: Vote on Topic for this Week!
- Monday November 25: **Flex Day**
- Wednesday November 27: **Flex Day**
- Friday November 29: **No Class – Fall Break**

Week 15: Eco-Emancipation
- Monday December 2: **Eco-Responsibility**
    - Sharon Krause, "Eco-Responsibility," *Eco-Emancipation: An Earthly Politics of Freedom* (Princeton University Press, 2023): pp. 101-122.
        - **Recommended** (Read first, if you choose to read it)
            - Sharon Krause, "Awakenings," *Eco-Emancipation: An Earthly Politics of Freedom* (Princeton University Press, 2023): pp. 1-29.
- Wednesday December 4: **Ecological Emancipation**
    - Sharon Krause, "Ecological Emancipation," *Eco-Emancipation: An Earthly Politics of Freedom* (Princeton University Press, 2023): pp. 123-151.
- Friday December 6:
    - **Friday Activity 9: End of Semester Wrap-Up**

Flex Day Possible Readings or Topics
- Andreas Malm, "Blowing up Despair," in *How to Blow up a Pipeline*
- Olúfẹ́mi O. Táíwò, selections from *Reconsidering Reparations*
- Extinction and how emerging technologies could help the biodiversity crisis
- Critical Mineral Mining and Electric Vehicles
- Renewable Energy
- Dams