Sustainability Studies (STS 363/H)
Department of Humanities and Social Sciences
New Jersey Institute of Technology
Fall 2025

Organizational Details

Instructor: Dr. Maurie Cohen
Time: Tuesdays, 6–8:50pm
Room: FMH 408
Course Website: https://canvas.njit.edu
Prerequisites: HUM 102 with a grade of C or higher and one History and Humanities GER 200-level course with a grade of C or higher.
Course credit: This course satisfies the three-credit 300-level GER in History and Humanities and counts toward meeting the requirements of the Minor in Environmental and Sustainability Studies and the Minor in Science, Technology, and Society
Office Location: Cullimore 433
Office Hours: Tuesdays, 3–5pm and by appointment (email me in advance)
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Teaching Assistant: Arianna Alves (asa235@njit.edu)

Overview

What Is Sustainable Development?

For almost 40 years, the idea of sustainable development has been a major goal for leaders and policymakers around the world. It is all about finding the sweet spot where society, the economy, and the environment can thrive together. We have seen new global organizations created to tackle this challenge, and existing ones have shifted their focus to sustainability. On a smaller scale, local communities have launched projects to use land more responsibly, and businesses have started to reduce their environmental footprint.

But despite all this effort, defining sustainable development can be tricky. It is a concept that is still hard to pin down, and it is challengingto find clear evidence of major progress, especially in the United States. To make things more complicated, developed nations and developing nations often have very different – and sometimes conflicting—ideas about how to achieve sustainability. This is especially true for large, fast-growing economies like China, India, Indonesia, and Brazil.

What This Course Will Cover?

This course will focus on the unique challenges of sustainable development for *wealthy nations*, like the members of the G20 (http://www.g20.org) and the Organization for Economic Co-operation and Development (https://www.oecd.org). We will explore where the concept of sustainable development came from and discuss why it has become such a central part of global politics and policy so quickly.

We will also look ahead to the future. What will the sustainability agenda look like in the coming decades? We will consider major factors like the growing impact of climate change, the physical limits on economic growth, the lingering effects of the COVID-19 pandemic, and new,

powerful technologies like generative artificial intelligence.

Course Learning Outcomes

- *Understand where the concept of sustainable development came from*. We will explore the political events and scientific discoveries that led to the creation of this major global idea.
- *See how everything is connected*. You will learn why environmental, social, and economic issues are not separate, but are all essential parts of a single, healthy system.
- *Recognize different challenges.* We will look at why the path to sustainability is different for wealthier countries compared to developing nations, and what those challenges are.
- *Evaluate technology*. You will be able to see the potential – and the limits – of using new technologies to create a more sustainable world.
- *Connect the dots*. The course will help you understand the complex relationship between economic growth, how we use our planet's resources, and the Earth's biophysical limits.

Required Readings

Cohen, Maurie. 2021. *Short Introductions: Sustainability*. Cambridge: Polity Press (available at the bookstore and through online sources) (ISBN 978-1-5095-4032-7)

All other readings and multimedia presentations will be available via the course website (https://canvas.njit.edu) and organized into weekly folders.

Evaluation

The evaluation of student performance comprises five components: attendance, participation, weekly quizzes, midterm exam, and final exam

1. ***Attendance (15%):*** Students are expected to attend each class session and a record will be kept (late arrival – more than thirty minutes – without prior notification will be treated as an absence). Each student will be granted two "free absences" during the semester; every subsequent absence will mean a full letter-grade reduction in the attendance portion of your final grade (i.e., three absences is a B, four absences is a C, and so forth).

2. ***Participation (15%):*** Students are encouraged to engage actively in in-class discussions by offering comments, posing questions, and demonstrating familiarity with the course material. You can alternatively (or additionally) participate in the various online conversations that will take place during the semester. Feel free to ask me for a periodic performance appraisal if you would like feedback on your standing with respect to participation.

3. ***Weekly Quizzes (25%):*** We will have (at the start of class) weekly quizzes based on the prior week's session and assigned readings. These assessments will generally comprise five multiple-choice questions and two or three definitional or short-answer questions. The quizzes will be conducted on paper to avoid the temptation to rely on AI for assistance. There are no make-up quizzes in cases of absence and students will be allowed to drop their two lowest scores. *The first quiz will be on Tuesday, September 16.*

4. ***Midterm Exam (20%):*** The midterm is intended to be a "synthesizing experience," and it will be a combination of multiple-choice questions and two essays. The multiple-choice

questions will be similar to the weekly quiz questions. For the latter part, I will provide two or three articles (or multimedia resources such as videos or podcasts) one week in advance that integrate across the various themes covered during the first half of the semester. On the day of the midterm, I will then give you several questions and you will have approximately one hour to write responses to two questions of your own choosing.

5. ***Final Exam (25%):*** The final exam will use the same format described above for the midterm and the scope of the assessment will focus predominantly on the second half of the semester.

Final Grading Rubric
90–100 = A
87–90 = B+
80–87 = B
77–80 = C+
70–77 = C
60–70 = D
< 60 = F
***** *As a general rule, a grading curve is not applied.*

Statement on Academic Integrity

"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at*:* http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf."

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Office of the Dean of Students**.** Any student found in violation of the code by cheating, plagiarizing, or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university**.** In the event of questions about the code of Academic Integrity, please contact the Office of the Dean of Students at dos@njit.edu. You may also want to refer to the article entitled "Plagiarism Lines Blur for Students in the Digital Age," which is available on the course website.

Note on the Use of Generative Artificial Intelligence

In accordance with university policies, the uncited use of generative artificial intelligence in the form of (but not limited to) ChatGPT and Grammarly is regarded as a violation of the above-referenced statement on academic integrity. If a student uses one of these technologies at *any* stage of the writing process without full and complete acknowledgement and attribution, it will be treated as plagiarism and reported to the Office of the Dean of Students for further review. Depending on the specific circumstances, the outcome of the adjudication process may involve failure on the specific assignment or, in certain instances, failure of the course.

Other Policies

- ***Make-up exams:*** I am unenthusiastic about allowing make-up exams and will only do so in

extraordinary cases and with confirmation of absence by the Office of the Dean of Students.

- ***Incompletes:*** A grade of incomplete is only assigned in the face of extremely extenuating circumstances that are pre-confirmed by the Office of the Dean of Students. Students facing such a situation are also encouraged to bring the matter to my attention at the earliest possible opportunity.

Course Schedule

Week 1 (September 2): Introduction and Orientation

Week 2 (September 9) Conceptual and Scientific Foundations of Sustainability (*Why Are We Talking About Sustainability?*)

Overbye, Dennis. 2018. Apollo 8's *Earthrise*: the shot seen round the world. *The New York Times*, December 21.

Boulton, Matthew and Joseph Heithaus. 2018. We are all riders on the same planet. *The New York Times*, December 24.

Goldstein, Richard. 2024. William A. Anders, 90, Dies; Flew on First Manned Orbit of the Moon. *The New York Times*, June 7.

Rockström, Johan. 2009. A safe operating space for humanity. *Nature* 461(24): 472–475.

Sustainability Science Education: A history of sustainability. https://www.youtube.com/watch?v=1XoxyMgIGGc

AI Summary: https://docs.google.com/document/d/11Y34utTjfnnWbN2P1nCNHhSQAB3jhnT7Er4JzE7p_e0/edit?tab=t.0

Week 3 (September 16): History and Politics of Sustainability *(Where Did the Notion of Sustainability Come From?)*

Cohen, Maurie. 2021. What is sustainability? 1–21 in *Short Introductions: Sustainability*.

Du Pasani, Jocabus. 2006. Sustainable development: historical roots of the concept. *Environmental Sciences* 3(2): 83–96.

Scoones, Ian. 2016. The politics of sustainability and development. *Annual Review of Environment and Resources* 41: 293–319.

Caradona, Jeremy. Sustainability: a history. https://www.youtube.com/watch?v=hho1h7OR6l8

Earthrise Studios. Is sustainability a lie? https://www.youtube.com/watch?v=IBxghkRL-N0

AI Summary: https://docs.google.com/document/d/1PO5DNg29_YqrHB91mNCumBBZTXzLVZ2xMwWrKa1Nl50/edit?tab=t.0

QUIZ 1 based on Week 2

Week 4 (September 23): Are We There Yet? Measuring Sustainability *(How Can We Measure Something that Is So Hard to Define?)*

Cohen, Maurie. 2021. The science of sustainability, 22–46 in *Short Introductions: Sustainability*.

Heal, Geoffrey. 2012. Reflections: defining and measuring sustainability. *Review of Environmental Economics and Policy* 6(1): 147–163.

Kumar, P. 2020. Measuring for sustainability. *Nature Sustainability* 3: 576.

Sustainability Learning Suites: Sustainable development: How do we measure it? https://www.youtube.com/watch?v=-jnH9o8Ajd0

AI Summary: https://docs.google.com/document/d/19VscS516Kv4H6F2VhiM-RqKqezY9IuFAUqxiamGGN1o/edit?tab=t.0

QUIZ 2 based on Week 3

Week 5 (September 30): Sustainability and Technoscience I – The Theory and Practice of Ecological Modernization *(Can We Engineer Our Way to a More Sustainable Future?)*

Cohen, Maurie. 2021. Engineering a more sustainable future, 47–67 in *Short Introductions: Sustainability*.

Kolbert, Elizabeth. 2007. Mr. Green: environmentalism's most optimistic guru. *The New Yorker*, January 22.

Nijhuis, Michelle. 2015. Is the *Ecomodernist Manifesto* the future of environmentalism? *The New Yorker*, June 2.

Gelles, David, Brad Plumer, Jim Tankersley, and Jack Ewing. 2023. The clean energy future is arriving faster than you think. *The New York Times*, August 17.

Pritzker, Rachel. An eco-modernist manifesto. https://www.youtube.com/watch?v=PcAKs7DVkPw.

AI Summary: https://docs.google.com/document/d/1GtjTvw6oOI6Tma7O4W6jdfb8umff1ZI97qHmhLQBuUM/edit?tab=t.0

QUIZ 3 based on Week 4

Week 6 (October 7): Sustainability and Technoscience II – Industrial Ecology and Earth Systems Engineering *(What Would Happen If We Treated the Challenge of Sustainability as an Engineering Problem?)*

Frosch, Robert and Nicholas Gallopoulos. 1989. Strategies for manufacturing. *Scientific American* 261(3): 144–153.

Specter, Michael. 2012. The climate fixers: Is there a technological solution to global warming? *The New Yorker*, May 14.

Tankersley, Jim, Brad Plumer, Ana Swanson, and Ivan Penn. 2023. The energy transition: it's irking friends and foes. *The New York Times,* August 17.

Gelles, David. 2024. This scientist has a risky plan to cool Earth. There's growing interest. *The New York Times*, August 1.

Marian Chertow, Industrial ecology and symbiosis in the development world. https://www.youtube.com/watch?v=LxCZIZuADGg

Institution of Chemical Engineers, Engineering a sustainable world. https://www.youtube.com/watch?v=hbH221pArAk

AI Summary: https://docs.google.com/document/d/1DQ3goyvLNsgLZNVBO6et3aJEN6jYtjfX6ZJlon-tYeE/edit?tab=t.0

QUIZ 4 based on Week 5

Week 7 (October 14): Sustainability and Technoscience III – Eco-design and the Potential of a Circular Economy *(Is the Notion of a Circular Economy the Answer We Have Been Looking For All This Time?)*

McDonough, William and Michael Braungart. 1998. The next industrial revolution. *The Atlantic*, October.

Stahel, Walter. 2016. Circular economy. *Nature* 531:435-437.

Schwab, Klaus. 2016. The Fourth Industrial Revolution: what it means and how to respond. *World Economic Forum*, January 14.

Ewing, Jack, Clifford Krauss, and Lisa Friedman. 2023. The energy transition: it's a battle for hearts and minds. *The New York Times*, August 17.

Bank Lombard Odier and Company, The transition to a sustainable economic model. https://www.youtube.com/watch?v=GYIbWRRrJyY&t=18s

Arup, Circular economy principles for achieving net zero in the built environment. https://www.youtube.com/watch?v=rWFkLa-QI0s

Sustainability Illustrated, Circular economy: definition and examples. https://www.youtube.com/watch?v=X6HDcubgxRk

AI Summary: https://docs.google.com/document/d/1g13pW8yy4Ve8YDOO_bK89mhwSjoks4jD0gispb_Ool4/edit?tab=t.0

QUIZ 5 Based on Week 6

Week 8 (October 21): Midterm Exam

Week 9 (October 28): Sustainability and the Limits of Techoscientific Innovation *(What Happens If the Engineers are Wrong?)*

Zehner, Ozzie. 2014. Unclean at any speed. *IEEE Spectrum*, June 30.

Owen, David. 2010. The efficiency dilemma. *The New Yorker*, December 20.

Saxe, Shoshanna. 2019. I'm an engineer, and I'm not buying into "smart" cities. *The New York Times*, July 16.

Michael Huesemann, Why technology can't save us. (See also the video version of the text at http://www.ratical.org/ratville/AoS/MHuesemann102514.html.)

Dan O'Neill, What is sustainability? https://www.youtube.com/watch?v=iI779TrHT1M

Today Explained, Is your refrigerator running? https://podcasts.apple.com/gb/podcast/is-your-refrigerator-running/id1346207297?i=1000663711989

AI Summary: https://docs.google.com/document/d/11-mtJceEq-WBv0zdp1-aEQxlpJ3KTsIkHwR3Dt7uf1g/edit?tab=t.0

Week 10 (November 4): Gross Domestic Product and Its Flaws *(Does Sustainability Really Mean that We Need to Rethink Economic Growth?)*

Clifford Cobb, Ted Halstead, and Jonathan Rowe. 1995. If the GDP is up, why is America down? *The Atlantic*, October.

Gertner, Jon. 2010. The rise and fall of the GDP. *The New York Times Magazine*, May 13.

Lederer, Katy. 2015. The end of GDP? *The New Yorker*, September 9.

Taylor, Matthew. 2024. 'These ideas are incredibly popular': what is degrowth and can it save the planet? *The Guardian*, August 27.

Robert Gordon, The death of innovation, the end of growth. https://www.ted.com/talks/robert_gordon_the_death_of_innovation_the_end_of_growth?subtitle=en

Post-Carbon Institute, Who killed economic growth? https://www.youtube.com/watch?v=EQqDS9wGsxQ

AI Summary: https://docs.google.com/document/d/1vfW0Eux-lrWn3UVnt0GQyXxIeIlOtPH9wiasiH7mWe8/edit?tab=t.0

QUIZ 6 based on Week 9

Week 11 (November 11): Is a Steady-State Economy Possible…Inevitable? *(Do We Need to Put the Brakes on Economic Growth?)*

Wolf, Martin. 2012. Is unlimited growth a thing of the past? *Financial Times*, October 2.

Daly, Herman. 2008. A steady-state economy. *The Ecologist*, April 1.

Speth, James Gustave. 2008. Modern capitalism: out of control. In *The Bridge at the Edge of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability,* 46–66. New Haven, CT: Yale University Press.

Dan O'Neill, What is a steady-state economy? How do we achieve it? https://www.youtube.com/watch?v=rAXPLfiHP2g0

CNBC, Degrowth: Is it time to live better with less? https://www.cnbc.com/2021/02/19/degrowth-pushing-social-wellbeing-and-climate-over-economic-growth.html

BBC, Less is more: Can degrowth save the world? https://www.bbc.com/reel/video/p0jg7gxh/less-is-more-can-degrowth-save-the-world-

AI Summary: https://docs.google.com/document/d/1nZcrrF0zj1I56okkmqXo-GFMc3dRBCLRJ2TA-6h0KBk/edit?tab=t.0

QUIZ 7 based on Week 10

Week 12 (November 18): Toward Sustainable Consumption and Lifestyles *(Is Unsustainability My Fault?)*

Assadourian, Erik. 2013. Re-engineering cultures to create a sustainable civilization, 113–125 in *State of the World 2013: Is Sustainability Still Possible*. Washington, DC: Island Press.

Maniates, Michael. 2002. Individualization: plant a tree, buy a bike, save the world? in *Confronting Consumption* edited by Thomas Princen, Michael Maniates, and Ken Conca, 43–66. Cambridge, MA: MIT Press.

Roberts, David. 2019. Cities are beginning to own up to the climate impacts of what they consume. *Vox*, July 1.

Ana Poças Ribeiro, How I can reduce consumption for a sustainable futurek, TED, https://www.youtube.com/watch?v=0I9QrBCJNYE

Kartik Moorthy, SDG 12: Explaining responsible consumption and production. Rotterdam School of Management, Erasmus University. https://www.youtube.com/watch?v=-QSZIAc38lg

AI Summary: https://docs.google.com/document/d/17JtofDQ9PGkEx4DMBdviSEg5UiXmhT6X1gtHeWSp3Yw/edit?tab=t.0

QUIZ 8 based on Week 11

Thanksgiving Break: No Class on November 25 (Thursday Schedule in Effect)

Week 13 (December 2): Prosperity, Economic Growth, and Sustainability *(Does Money Buy Happiness (and Well-Being))?*

Cassidy, John. 2020. Can we have prosperity without growth? *The New Yorker*, February 10.

Jackson, Tim. 2017. The limits to growth. In *Prosperity Without Growth: Foundations for the Economy of Tomorrow*, 1–22. London: Routledge.

Alexander, Samuel. 2014. Life in a "degrowth" economy, and why you might actually enjoy it. *The Conversation*, October 1.

Tim Jackson, Tim Jackon on prosperity without growth https://www.euractiv.com/section/economy-jobs/video/tim-jackson-on-prosperity-without-growth/

Michael Green, How we can make the world a better place by 2030. https://www.ted.com/talks/michael_green_how_we_can_make_the_world_a_better_place_by_2030

AI Summary: https://docs.google.com/document/d/1aYnjUPlsDVDUmq-jCyKJPsjbOknFNwFlJK4heCB_DjU/edit?tab=t.0

QUIZ 9 based on Week 12

Week 14 (December 9): Forecasting (and Backcasting) the Future and Designing Pathways for Sustainability Transitions *(What is a Sustainability Transition and Can We Develop and Implement a Plan to Achieve It?)*

Geels, Frank. 2024. The Multi-Level Perspective on sustainability transitions: background, overview, and current research topics, *Introduction to Sustainability Transitions Research*. Cambridge: Cambridge University Press.

Raskin, Paul. 2015. A Great Transition? Where we stand. *In These Times*, March 13.

Sustainability Illustrated, Sustainability strategy: backcasting from success. https://youtu.be/DeDm-HTFuiY

Landcare Research, MLP: Insights into social and technological change. https://www.youtube.com/watch?v=1VtokMi8JrU

AI Summary: https://docs.google.com/document/d/1TmAIU-CXIL69yVxZdhjgb6VG0INGeqIj8woy_9DtOro/edit?tab=t.0

QUIZ 10 based on Week 13

Week 15 (December 16): Final Exam