

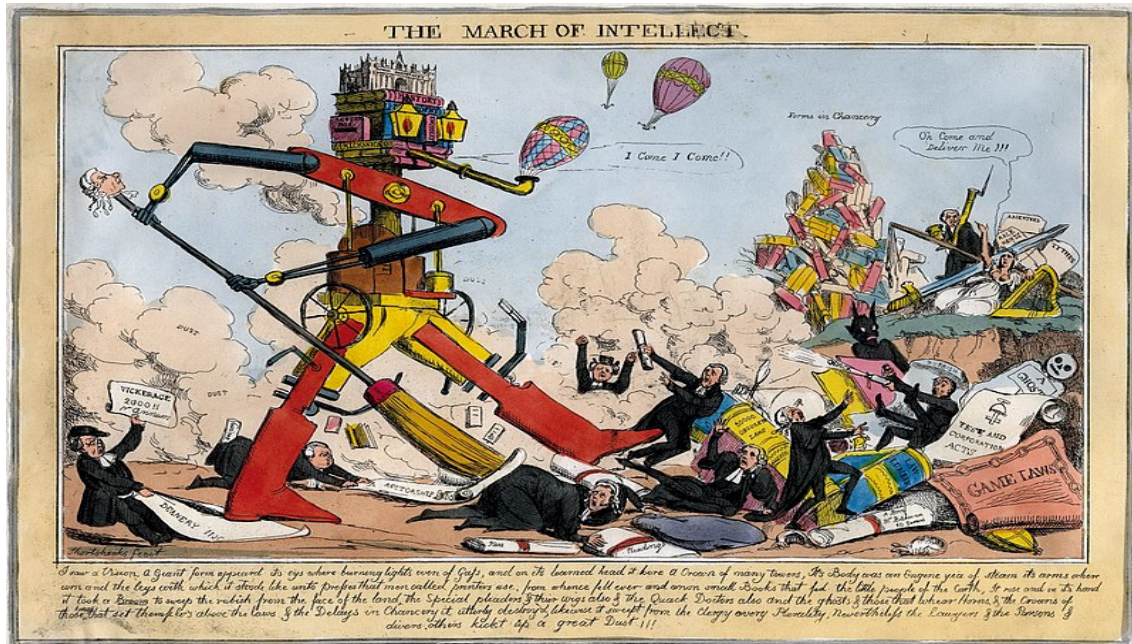
HUMN 25: Humans and Machines: A Critical History

Summer Session 2024 | July 29—August 31 | Zoom (on Canvas)

Instructor: Won Jeon, History of Consciousness

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Office Hour: Zoom (on Canvas)



William Heath, The March of Intellect (1828). The Trustees of the British Museum.

Course Description:

The expansive history of humans' relationships with machines prompts a slew of strange questions: Can machines think? How is technological development related to biological evolution? What is the role of scientists and technologists in making political decisions such as the targeting of nuclear weapons? What are the global impacts of technoscientific innovation to labor and workplace struggle? What is life (and death)? Utility and value? What is it about *you*, the human subject, that is distinct from the intelligent machine?

This course explores such philosophical, socio-political, and economic problems generated by the contact between humans and machines throughout history. Emphasis will be placed on a retroactive trajectory of technological development in the West from the present to the past informing the future. We will encounter perspectives from various disciplines (social and political theory, history of economics, philosophy of science, STS

HUMN25 Syllabus

studies, critical theory) to survey a range of ideas about the evolution of science and technology in capitalist economies.

This course fulfills the Textual Analysis & Interpretation (TA) GE.

Learning Outcomes:

Students will:

Explore how humans and machines interact in a transnational historical context;

Analyse theories of the role of machines in human society and show a basic knowledge of a historical evolution of technology;

Critically examine concepts explored in discourses of cybernetics, game theory, information theory, systems theory, artificial intelligence, and posthumanism as well as social theories of automation, labor, and value;

Interrogate distinctions made between subject and object, nature and culture, living and artificial, and self and other in the connections made between humans and machines;

Map effectively their position as a critical thinker and writer within an interdisciplinary study of science, technology, and society.

Course Evaluation:

Class Participation and Discussion (25%)

Attendance 15%

Participation 10%

Evaluation for participation includes timely attendance of online synchronous classes, contributions to group discussions, and completion of online in-class activities.

Weekly Discussion Post (30%)

- By 11:59pm on Sundays, everyone will submit to Canvas: a response to one prompting question from me PLUS a question or questions of your own about the Monday reading, a description of a topic on which you would like me to comment, or anything else that you would like me to address in Wednesday's lecture. These submissions will be short—the equivalent of two short paragraphs. These will be graded for a total of 10 points each. Throughout the term, you are required to submit all three weekly responses to receive the full 30 points (10 points x 3 assignments = 30 points).
- Your responses should be about 400 words. The assumption behind this assignment (and all of them to follow) is that you have done all readings before writing, and the prompting questions are designed for you to reflect critically on the materials you have read. You must cite if you use any sources besides class readings and lectures.

Reading Presentation

15%

- 10-15 minute presentation on weekly readings

HUMN25 Syllabus

- On the first day of class, you will sign up to present on a chosen topic pertaining to a reading in a group of 2-3. Each class to follow will begin with a group presentation on the reading which includes a summary of the text, an identification of key concepts or themes, and discussion questions posed to the group.

Final Writing Assessment (5-7 pages)

30%

- Attend office hours with me to discuss final project

The final essay is due at the end of the quarter, [date TBD]. You will be given prompts for a critical essay or have the option to develop your own topic. Regardless of which option you choose, check in with me to discuss your topic individually. The "Check In" section of your final writing assignment is worth 10% of the final grade (total 30%).

Assignment Breakdown:

Assignment	Description	Due Date and Time	Points (100 total)
Attendance and Participation	Read course texts, attend class, and contribute to discussions.	Weekly	25
Weekly Discussion Post	Reflect on one reading prompted by a discussion session and respond to peers.	Weekly, by Sunday night.	30
Reading Presentation	Present on a designated reading for the week for 10-15 minutes in groups of 2-3.	Varies — sign up for presentations will occur on the first day of class.	15
Final Writing Assessment	Write 5-7 page research paper on a topic that explores one of the course thematics and draws on one text, current news article, or cultural object, one course reading, or one relevant text from outside the course readings.	[date TBD, finals week]	30* *Meeting with Won at least once to discuss final assignment topic and format is mandatory and constitutes 10 points of the total final grade.

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DRC Remote Accommodations:

The Disability Resources Center reduces barriers to inclusion and full participation for students with disabilities by providing support to individually determine reasonable academic accommodations. Operations continue via remote appointments. If you have questions or concerns about exam accommodations or any other disability-related matter, email the DRC Schedulers at drc@ucsc.edu for an appointment. You can contact DRC by phone at 831-459-2089.

You can also request to meet privately with me during my office hours or by appointment, as soon as possible. I would like us to discuss how we can implement your accommodations in this course to ensure your access and full engagement in this course.

Academic Dishonesty:

Academic integrity is the cornerstone of a university education. Academic dishonesty diminishes the university as an institution and all members of the university community. It tarnishes the value of a UCSC degree. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of scholarship is valued and preserved at UCSC.

In the event a student is found in violation of the UCSC Academic Integrity policy, he or she may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed either by the provost of his or her college or the Academic Tribunal convened to hear the case. Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript.

For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Integrity page](#) at the Division of Undergraduate Education.

Title IX:

The university cherishes the free and open exchange of ideas and enlargement of knowledge. To maintain this freedom and openness requires objectivity, mutual trust, and confidence; it requires the absence of coercion, intimidation, or exploitation. The principal responsibility for maintaining these conditions must rest upon those members of the university community who exercise most authority and leadership: faculty, managers, and supervisors.

The university has therefore instituted a number of measures designed to protect its community from sex discrimination, sexual harassment, sexual violence, and other related prohibited conduct. [Information about the Title IX Office](#), the [online reporting link](#), applicable campus resources, reporting responsibilities, the [UC Policy on Sexual Violence and Sexual Harassment](#), and the UC Santa Cruz Procedures for Reporting and Responding to Reports of Sexual Violence and Sexual Harassment can be found at titleix.ucsc.edu.

Confidential resources are available through [CARE](#). Confidentiality means CARE advocates will not share any information with Title IX, the police, parents, or anyone else without explicit permission. CARE advocates are trained to support you in understanding your rights and options, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. You can contact CARE at (831) 502-2273 or care@ucsc.edu.

In addition to CARE, these resources are available to you:

- If you need help figuring out what resources you or someone else might need, visit the [Sexual Violence Prevention & Response \(SAFE\) website](#), which provides information and resources for different situations.
- [Counseling & Psychological Services \(CAPS\)](#) can provide confidential counseling support. Call them at (831) 459-2628.

Reading Schedule:

Week 1: “We are the extreme case: a natural mechanical device“

Class 1: Introduction: What is a human that it may create a machine?

- Evelyn Fox Keller, “The Body of a New Machine: Situating the Organism Between Telegraphs and Computers,” *Refiguring Life*, 1995, 79-117.
- Homer, excerpt from *The Iliad* Book XVIII: The Shield of Achilles, trans. Robert Fagles, 468–473. (*Give closer reading to Line 430 onwards*)
- Samuel Butler, “Darwin Among the Machines,” *The Press* newspaper on 13 June 1863.

Class 2: What is a machine that a human might use it?

- Aaron Benanav, “Automation and the Future of Work,” *New Left Review* 112, Sept/Oct 2019, 5-38.
- Douglas Hofstadter, “Ten Questions and Speculations,” *Gödel, Escher, Bach*, 673-677.

Week 2: The Computer [1920 - present]

Class 3: Information: An Origin Story

- Philip Mirowski, “Adventures of a Red Hot Demon,” excerpt from *Machines Dreams: How Economics Became a Cyborg Science*, 43-54.
- Phillip Mirowski and Edward Nik-Khah, excerpts from *The Knowledge We Have Lost In Information*, 31-50; 233-242.

Class 4: The Cyb[ernetic] Org[anism]

- N. Katherine Hayles, “Liberal Subjectivity Imperiled: Norbert Wiener and Cybernetic Anxiety,” *How We Became Posthuman*, 84-110.
- Tessa Morris Suzuki, “Capitalism in the Computer Age,” *New Left Review*, 1/160, Nov/Dec 1986.

Week 3: The Steam Engine [1790–1840]

Class 5: The Human Motor

Anson Rabinbach, “Introduction” and “Transcendental Materialism: The Primacy of *Arbeitskraft* (Labor Power),” *The Human Motor: Energy, Fatigue, and the Origins of Modernity*, 1-18; 45-68.

Sadi Carnot, excerpt from *Reflections on the Motive Power of Fire* (1824)

Class 6: Energy, Work, and the Value of Labor

Maxine Berg, “The Machinery Question,” *The Machinery Question and the Makings of Political Economy 1815-1848*, 9-42.

Simon Schaffer, “Babbage’s Intelligence: Calculating Engines and the Factory System,” *Critical Inquiry*, Autumn 1994, Vol. 21, No. 1, 203-227.

Week 4: The Pendulum Clock [1650-1750]

Class 7: The Mechanistic Universe

Michael Losonsky, "The Nature of Artifacts," *Philosophy*, 1990, Vol. 65, No. 251, 81-88.
Hylarie Kochiras, "The Mechanical Philosophy and Newton's Mechanical Force,"
Philosophy of Science, Vol. 80, No. 4 (2013), 557-578.

Class 7: "Like Clockwork"

Jessica Riskin, "Descartes Among the Machines," *The Restless Clock: A History of the Centuries-Long Argument Over What Makes Living Things Tick*, (2015), 44-76.
David Scott, "Leibniz and the Two Clocks," *Journal of the History of Ideas*, Vol. 58, No. 3, 1997, 445-463.

Week 5: Humans and Machines, then and now [8th century BC—2024 onwards]

Class 9: Prescient Antiquities

- Lorraine Daston, "Algorithms Before Mechanical Control," *Rules: A Short History of What We Live By*, 82-121.
- Otto Mayr, "Introduction" and "Feedback Control in Hellenistic Technology," *Origins of Feedback Control*, 1-26.

Class 10: Contentious Futures

- Mary L. Gray and Siddharth Sudi, "Ghosts in the Machine," *Ghost Work: How To Stop Silicon Valley From Building a New Global Underclass* (2019).
- Gavin Mueller, "High Tech Luddism," *Breaking Things at Work: The Luddites are Right About Why You Hate Your Job*, Verso Books, 2021, 93-126.