

**HISTORY 577S / PHIL 541S / LIT 521S / GSF 541S**  
**Historical and Philosophical Perspectives on Science**  
**Spring 2021**

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Meeting online, Tuesdays 3:30pm – 6:00pm (Durham time; links to come)

JJ Office Hours: Mon 2-4pm & by appt., [link TBD]

EHS Office Hours: Weds 2-4pm & by appt., <https://duke.zoom.us/j/99652139547>

This course provides an integrated introduction to methods for scrutinizing the nature of science, scientific change, and the relationship between science and society.

**Course requirements and grading:**

- Complete weekly readings; write weekly reading responses (brief & informal); 50% open one meeting's discussion; take part in discussion as both speaker & listener.
- Research paper (12-15pp) or alternative term project of comparable scope, 50% including proposal. (For those seeking "history of modern" credit in philosophy or HPSTM core seminar credit, the research paper must be on a relevant topic.)

**Collegiality and mutual support:** We will be engaging ideas, events, writing, and images that may be troubling to some or all of us, as well as with topics that are likely of significant personal experience for some of us and uncertain or unfamiliar to others. We all bring different perspectives, experiences, identities, and concerns to this class. You will all (we hope!) disagree with some of the arguments advanced by course authors, instructors, and each other. We ask that you join us in engaging each other with consideration and curiosity, posing frank questions, presenting sincere arguments, testing uncertain ideas, and listening and responding to each other in a tough-minded spirit of generosity.

**Unforeseen conflicts:** We're committed to being flexible and making accommodations that are fair to all. If you anticipate trouble, please speak with us as soon as possible. The more we can stay ahead of challenging circumstances, the better we'll be able to navigate them.

**Online etiquette:** With the exception of emergencies, please join us in directing all in-meeting multitasking toward activities that feed into our course (comments in chat, consulting relevant sources online) rather than distract from it. We encourage you to keep your camera enabled during our video meetings. However, if and when switching video off for a while is more conducive to your full and energetic participation in our discussion, please feel free to do so. As much as possible, please join our class from a quiet, distraction-free space, mute your microphone when not speaking, and use whatever combination of headphones, microphone, and other peripherals you need to support clear communication. For technology and accessibility support, please contact the [Academic Resource Center](#), [OIT](#), the [Keep Learning](#) webpage, and/or the Duke [loaner laptop/hotspot application](#).

**Syllabus subject to change at instructor's discretion. See Sakai for latest version.**

**Accommodations and accessibility:** We want to do all we can to ensure that this class is accessible, inclusive, and equitable for all students. Please notify us within the first two weeks of class (or as soon as possible thereafter, for concerns arising mid-semester) with information about accommodations that we can provide to ensure accessibility, per the [Student Rights and Responsibilities](#) of the Duke accessibility office. If you have other concerns about classroom inclusiveness, please let us know. We will work with you!

Duke University is committed to providing equal access to students with documented disabilities. Students with disabilities may contact the Student Disability Access Office (SDAO) to ensure your access to this course and to the program. There you can engage in a confidential conversation about the process for requesting reasonable accommodations both in the classroom and in clinical settings. Students are encouraged to register with the SDAO as soon as they begin the program. Please note that accommodations are not provided retroactively. More information can be found online at [access.duke.edu](https://access.duke.edu) or by contacting SDAO at 919-668-1267, [SDAO@duke.edu](mailto:SDAO@duke.edu).

**Collaboration and academic integrity:** You are warmly encouraged to consult with others in and outside of class on all aspects of this course. Please acknowledge especially substantial assistance you receive from anyone other than course instructors. All submissions should reflect your own thinking and writing. This course is subject to the [Duke Community Standard](#)—make sure you're familiar with it. Questions? Please ask!

**Late submissions:** Except with prior consultation and written consent of instructor, a *\*1/3 letter grade\** (A to A-, A- to B+, etc.) will be deducted from assignments submitted after the deadline listed on the syllabus. An *\*additional 1/3 letter grade\** will be deducted for each additional two days of late submission (including weekends). Questions? Ask! (Please do ask; deadlines are there to support your progress through the course, not to burden you.)

**Acknowledgements:** Science does not take place in a vacuum; neither do history and philosophy. This course asks general (indeed, world sized!) questions—What is science? What does it do? What *should* it do? How does it progress? Who contributes? Benefits? Is injured?—through specific episodes and case studies. We, too, are working at a particular time and place: Duke University, on ancestral lands of the Eno, Occaneechi, Shakori, and Tuscarora peoples, in the American South. We encourage students to come to our course in a spirit of curiosity and responsibility toward the histories and philosophies of our own institutions, communities, and disciplines—and of the people who lived before, beyond, within, alongside, and despite them.

*All readings will be available electronically via Sakai.*

**Syllabus subject to change at instructors' discretion.**

## COURSE OVERVIEW

Week 1 Jan 26	<b>Introductory remarks: What is history &amp; philosophy of science?</b> Merton, "Science and Technology in a Democratic Order" (1942); Kuhn, <i>The Structure of Scientific Revolutions</i> (Chs. 1, 4, 9) (1962); Daston, "The History of Science and the History of Knowledge" (2017); Numbers and Kampourakis, <i>Newton's Apple</i> (2015) (Myth 27 + two "myths" of your choice)
Week 2 Feb 2	<b>Measurement and standardization</b> Chang, <i>Inventing Temperature</i> (2004) <b>**Author visit!**</b>
Week 3 Feb 9	<b>Quantification</b> Porter, <i>Trust in Numbers</i> (1995); Prescod-Weinstein, "Curiosity and the End of Discrimination" (2017)
Week 4 Feb 16	<b>Objectivity</b> Du Bois, "The Study of Negro Problems" (1898); Jones, Introduction (2012) to Du Bois, <i>Black Reconstruction in America</i> ; Haraway, "Situated Knowledges" (1988); Douglas, <i>Science, Policy, and the Value-Free Ideal</i> (2009)
Week 5 Feb 23	<b>Science on the page</b> // <i>Philosophical Transactions</i> exercise (details below) Bian, <i>Know Your Remedies</i> (2020); Blair, <i>Too Much to Know</i> (2010) (Intro & Ch. 1)
Week 6 Mar 2	<b>Objects of science</b> // <b>**Research interest presentations I**</b> Mol, <i>The Body Multiple</i> (2002)
Week 7 Mar 9	NO READING; class meeting optional
Week 8 Mar 16	<b>Classification (minds)</b> // <b>**Research interest presentations II**</b> Tsou, "The Importance of History for Philosophy of Psychiatry" (2011); Kendler, Parnas, and Zachar, <i>Levels of Analysis in Psychopathology</i> (2020) (chapter TBD); Canino and Alegria, "Psychiatric Diagnosis" (2008); Fanon, <i>The Wretched of the Earth</i> (2004 [1961]) (Ch. V)
Week 9 Mar 23	<b>Classification (races)</b> // <b>**Research interest presentations III**</b> TallBear, <i>Native American DNA</i> (2013); de la Cadena, <i>Indigenous Mestizos</i> (2000) (Intro)
Week 10 Mar 30	<b>Science in the laboratory</b> // <b>**Final project proposals due (1-2pp.)**</b> Latour and Woolgar, <i>Laboratory Life</i> (1986 [1979]); Murphy, <i>Sick Building Syndrome</i> (2006) (Intro & Ch. 4)
Week 11 Apr 6	<b>Science in the field</b> Mavhunga, <i>The Mobile Workshop</i> (2018)
Week 12 Apr 13	<b>Does science evolve?</b> Cowles, <i>The Scientific Method</i> (2020) <b>**Author visit!**</b>
Week 13 Apr 20	<b>Closing remarks and presentations</b>
	<b>Final papers/projects due on Thurs, April 29</b>

**Syllabus subject to change at instructors' discretion.**

## DETAILS AND FURTHER READING

### Week 1: What is History and Philosophy of Science?

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- *Readings:*
  - Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 4th ed. (Chicago: University of Chicago Press, 2012 [1962]). **(Any edition is okay.)**
  - Robert K. Merton, "Science and Technology in a Democratic Order," *Journal of legal and political sociology* 1, no. 1 (1942): 115-126, <https://heinonline.org/HOL/P?h=hein.journals/jolegpo1&i=115>.
  - Lorraine Daston, "The History of Science and the History of Knowledge," *KNOW: A Journal on the Formation of Knowledge* 1, no. 1 (March 1, 2017): 131-54, <https://doi.org/10.1086/691678>.
  - Ronald L. Numbers and Kostas Kampourakis, eds., *Newton's Apple and Other Myths about Science* (Cambridge, Massachusetts: Harvard University Press, 2015), <https://find.library.duke.edu/catalog/DUKE008313194>.

### Week 2: Measurement and standardization

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- *Readings:*
  - Hasok Chang, *Inventing Temperature : Measurement and Scientific Progress* (New York: Oxford University Press, 2004), <https://find.library.duke.edu/catalog/DUKE004644591>.
- *Further reading:*
  - Peter Galison, *Image and Logic: A Material Culture of Microphysics* (Chicago: University of Chicago Press, 1997), esp. "The Trading Zone: Coordinating Action and Belief," pp. 781-844.
  - Ian Hacking, *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (New York: Cambridge University Press, 1983).

### Week 3: Quantification

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- *Readings:*
  - Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton University Press, 1995), <https://find.library.duke.edu/catalog/DUKE005596142>.
  - Chanda Prescod-Weinstein, "Curiosity and the End of Discrimination," *Nature Astronomy* 1, no. 6 (June 2, 2017): 1-3, <https://doi.org/10.1038/s41550-017-0145>.
- *Further reading:*
  - William Deringer, *Calculated Values : Finance, Politics, and the Quantitative Age* (Cambridge, MA: Harvard University Press, 2018), <https://find.library.duke.edu/catalog/DUKE008201097>.

**Syllabus subject to change at instructors' discretion.**

## Week 4: Objectivity

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- **Readings:**
  - Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14, no. 3 (1988): 575–99, <https://doi.org/10.2307/3178066>.
  - Heather E. Douglas, *Science, Policy, and the Value-Free Ideal* (Pittsburgh: University of Pittsburgh Press, 2009), <https://find.library.duke.edu/catalog/DUKE004193052>.
  - W. E. Burghardt Du Bois, "The Study of the Negro Problems," *The Annals of the American Academy of Political and Social Science* 11 (1898): 1–23, <https://www.jstor.org/stable/1009474>.
  - Mack H. Jones, introduction to W. E. B. Du Bois, *Black Reconstruction in America: Toward a History of the Part Which Black Folk Played in the Attempt to Reconstruct Democracy in America, 1860-1880* (New Brunswick: Transaction, 2012 [1935]).
- **Further reading:**
  - Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2007).

## Week 5: Science on the page

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- **Readings:**
  - He Bian, *Know Your Remedies : Pharmacy and Culture in Early Modern China* (Princeton: Princeton University Press, 2020), <https://find.library.duke.edu/catalog/DUKE009748185>.
  - Ann Blair, *Too Much to Know: Managing Scholarly Information before the Modern Age* (New Haven: Yale University Press, 2010), <https://find.library.duke.edu/catalog/DUKE008604838>.
  - *Philosophical Transactions of the Royal Society*, vol. 1, no. 1-2 (1667), <https://royalsocietypublishing.org/toc/rstl/1665/1/1>.
    - **Instructions:** Take a look through the various articles in the first two (or more) issues. Choose one. How it is reported? What is reported? What reasons, if any, are given for why the topic is of interest to the Royal Society? What reasons, if any, are given for the trustworthiness of the report? (Also available online through Duke library <https://find.library.duke.edu/catalog/DUKE009279964> via the Biodiversity Heritage Library)
- **Further reading:**
  - Alex Csiszar, *The Scientific Journal: Authorship and the Politics of Knowledge in the Nineteenth Century* (University of Chicago Press, 2018).

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## Week 6: Objects of science

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- *Readings:*
  - Annemarie Mol, *The Body Multiple: Ontology in Medical Practice* (Durham: Duke University Press, 2002), <https://find.library.duke.edu/catalog/DUKE006053295>.
- *Further reading:*
  - Ian Hacking, *Historical Ontology* (Cambridge, MA: Harvard University Press, 2002).

## Week 8: Classification (minds)

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- *Readings:*
  - Jonathan Y. Tsou, "The Importance of History for Philosophy of Psychiatry: The Case of the DSM and Psychiatric Classification," *Journal of the Philosophy of History* 5, no. 3 (September 2011): 446–70, <https://doi.org/10.1163/187226311X599907>.
  - Kenneth S. Kendler, Josef Parnas, and Peter Zachar, *Levels of Analysis in Psychopathology: Cross-Disciplinary Perspectives* (New York: Cambridge University Press, 2020).
  - Glorisa Canino and Margarita Alegría, "Psychiatric Diagnosis – Is It Universal or Relative to Culture?," *Journal of Child Psychology and Psychiatry* 49, no. 3 (2008): 237–50, <https://doi.org/10.1111/j.1469-7610.2007.01854.x>.
  - Frantz Fanon, *The Wretched of the Earth* (New York: Grove Press, 2004 [1961]) <https://find.library.duke.edu/catalog/DUKE009640015>.
- *Further reading:*
  - Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 1999).
  - Jonathan Metzl, *The Protest Psychosis: How Schizophrenia Became a Black Disease* (Boston: Beacon Press, 2009).
  - Ian Hacking, "Making Up People," *London Review of Books*, August 17, 2006, <https://www.lrb.co.uk/the-paper/v28/n16/ian-hacking/making-up-people>.
  - Nima Bassiri, "What Kind of History Is the History of the Self? New Perspectives from the History of Mind and Brain Medicine," *Modern Intellectual History* 16, no. 2 (August 2019): 653–65, <https://doi.org/10.1017/S1479244317000403>.
  - Neil Krishan Aggarwal, "Cultural Psychiatry, Medical Anthropology, and the DSM-5 Field Trials," *Medical Anthropology* 32, no. 5 (September 1, 2013): 393–98, <https://doi.org/10.1080/01459740.2013.776047>.
  - Arthur Kleinman, "Anthropology and Psychiatry: The Role of Culture in Cross-Cultural Research on Illness," *The British Journal of Psychiatry* 151, no. 4 (October 1987): 447–54, <https://doi.org/10.1192/bjp.151.4.447>.

**Syllabus subject to change at instructors' discretion.**

## Week 9: Classification (races)

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- *Readings:*
  - Kimberly TallBear, *Native American DNA: Tribal Belonging and the False Promise of Genetic Science* (University of Minnesota Press, 2013), <https://find.library.duke.edu/catalog/DUKE008557443>.
  - Marisol de la Cadena, *Indigenous Mestizos: The Politics of Race and Culture in Cuzco, Peru, 1919-1991* (Durham: Duke University Press, 2000), <https://find.library.duke.edu/catalog/DUKE006064033>.
- *Further reading:*
  - Ruha Benjamin, ed. *Captivating Technology: Race, Carceral Technoscience, and Liberatory Imagination in Everyday Life* (Durham: Duke University Press, 2019), <https://find.library.duke.edu/catalog/DUKE008885562>.
  - Ruha Benjamin, *Race after Technology: Abolitionist Tools for the New Jim Code* (Medford, MA: Polity, 2019), <https://find.library.duke.edu/catalog/DUKE009082364>.

## Week 10: Science in the laboratory

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- *Readings:*
  - Bruno Latour and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts*, 2nd ed. (Princeton: Princeton University Press, 1986 [1979]), <https://find.library.duke.edu/catalog/DUKE006585152>.
  - Michelle Murphy, *Sick Building Syndrome and the Problem of Uncertainty: Environmental Politics, Technoscience, and Women Workers* (Durham: Duke University Press, 2006), <https://find.library.duke.edu/catalog/DUKE006053369>.
- *Further reading:*
  - Steven Shapin, Simon Schaffer, and Thomas Hobbes, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985).
  - Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1958).
  - Mary Jo Nye, *Michael Polanyi and His Generation: Origins of the Social Construction of Science* (Chicago: University of Chicago Press, 2011), <https://find.library.duke.edu/catalog/DUKE005130489>.

## Week 11: Science in the field

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- *Readings:*
  - Clapperton Chakanetsa Mavhunga, *The Mobile Workshop: The Tsetse Fly and African Knowledge Production* (Cambridge, MA: MIT Press, 2018), <https://find.library.duke.edu/catalog/DUKE008810404>.
- *Further reading:*
  - Robert E. Kohler, *Landscapes & Labscapes: Exploring the Lab-Field Border in Biology* (Chicago: University of Chicago Press, 2002).

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**Week 12: Does science evolve?**

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- *Readings:*
  - Henry M. Cowles, *The Scientific Method : An Evolution of Thinking from Darwin to Dewey* (Cambridge, MA: Harvard University Press, 2020), <https://find.library.duke.edu/catalog/DUKE009409453>.
- *Further reading:*
  - Banu Subramaniam, *Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity* (Champaign, IL: University of Illinois Press, 2014), <https://find.library.duke.edu/catalog/DUKE008516407>.
  - Jürgen Renn, *The Evolution of Knowledge : Rethinking Science for the Anthropocene* (Princeton: Princeton University Press, 2020), <https://find.library.duke.edu/catalog/DUKE009392331>.

**ASK US ABOUT**

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- Domains of interest:
  - (alchemy, astronomy, climate science, computer science, economics, engineering, finance, geology, mathematics, phrenology, physics, primatology...)
- Duke-specific material:
  - (memoirs of studying science @ Duke, parapsychology, tobacco, scholarship by Duke authors...)
- Themes of interest:
  - Biography as a mode of HPS; industry, money, and science; pedagogy and science; prediction; pseudoscience; religion and science; skepticism and denialism