HPSC 3040

Science, Politics, and the State in Russia and the Soviet Union

Course Syllabus

2013-14 session | Simon Werrett | s.werrett@ucl.ac.uk

Course Information

How are science and politics related? What role does science play in governance, and how is science itself best governed? Is scientific knowledge apolitical, and if it is politically-informed, what consequences does this have? This module explores the interactions of science, politics, and the state through a study of science in Imperial Russia and the Soviet Union. From the reign of Peter the Great (1696-1725) to the time of Perestroika in the 1980s, Russian science always operated close to the state. Using cases from Russian and Soviet history, we will explore a variety of approaches for understanding relations of science, politics, and the state. Some comparative studies will show that science and politics are equally integrated in western liberal democracies.

Basic course information

Moodle Web site:	Search 'HPSC3040'
Assessment:	1 x 5000 word essay (80%) 1 x 1000-word write-up of in-class presentation (review essay) (20%)
Timetable:	www.ucl.ac.uk/sts/hpsc
Prerequisites:	No prerequisities
Required texts:	Loren R. Graham, *Science in Russia and the Soviet Union: A Short History* (Cambridge: Cambridge University Press, 1994) ISBN: 978-0521287890
Course tutor(s):	Simon Werrett
Contact:	s.werrett@ucl.ac.uk| t: 020 7679 [3261]
Web:	www.ucl.ac.uk/silva/sts/staff/werrett
Office location:	22 Gordon Square, Room 1.2
Office hours:	Tuesdays 11-12 Thursdays 11-12

Schedule

UCL Week	Topic	Date	Activity
20	Introduction	January 14/16	Read essential readings in time for Wednesday
21	Science and Patronage: the Imperial Court and the St. Petersburg Academy of Sciences	January 21/23	Read essential readings in time for Wednesday
22	Science and Empire: Imperial Russian Voyages of Exploration	January 28/30	Read essential readings in time for Wednesday
23	Science as a Spectacle: Instruments, Astronomy, and the Display of Power	February 4/6	Read essential readings in time for Wednesday
24	Gender and Science in Imperial Russia	February 11/13	Read essential readings in time for Wednesday
25	Reading Week	February 17-21	
26	Science and Ideology: Darwin in Nineteenth-Century Russia	February 25/27	Read essential readings in time for Wednesday
26	Essay proposal due	February 27	
27	Science and Revolution: Marxism, the Bolsheviks and the Reorganization of Science	March 4/6	Read essential readings in time for Wednesday
28	Science and Totalitarianism: Stalinism	March 11/13	Read essential readings in time for Wednesday
29	Technology and the Cold War	March 18/20	Read essential readings in time for Wednesday
30	Globalized Risk: Soviet Biological Warfare and the End of the USSR	March 25/27	Read essential readings in time for Wednesday
30	Presentation write-up due	April 4	
30	Final Essay due	April 7	

Assessments

Summary

	Description	Deadline	Word limit
Written version of Presentation	1000-word version of an in-class presentation	April 4	1000
Essay proposal	1-page description of planned essay and list of sources, based on a topic previously agreed with Dr. Werrett	February 27	n/a
Research Essay	Final 5000-word essay	April 7	5000

Assignments

The main assignment for this class is a research essay, exploring in-depth an aspect of the history of Russian or Soviet science agreed upon with the tutor. You should determine a topic and arrange to meet with Dr. Werrett to discuss its suitability before the end of January. Questions should be as focused as possible, and should be chosen with the availability of sources kept in mind (a list of suggested sources will be provided on the Moodle page). You should submit, by February 27, a single page detailing your topic and the sources you plan to consult (a factsheet on Moodle provides more details). This will not be graded, but it must be submitted. The final essay will be due on APRIL 7.

You will also be asked to make a presentation on the week's readings in class during the term. The presentation should last no more than FIFTEEN minutes, and should offer critical reflection on all of the assigned readings for the week (again a factsheet is available on Moodle). You will not be graded on your presentation, but you should submit online before APRIL 4 a written version of the presentation, up to 1000 words in length – this should take the form of a formal review of the readings, with full references and annotations where appropriate but no bibliography. This will be graded. All written work must be submitted via Moodle. In order to be deemed 'complete' on this module students must attempt the written presentation and final research essay.

This class will consist of two seminars each week. In the first hour, Dr. Werrett will speak on the historical and scientific background to the readings for the week. In the second hour, there will be a student presentation, followed by half an hour of discussion of the essential readings. Please make sure you read the essential readings for the week in time for the appropriate class and that you bring copies with you to class.

Criteria for assessment

The departmental marking guidelines for individual items of assessment can be found in the STS Student Handbook.

Aims & objectives

The general aim of the course is to provide an overview of the history of modern science in Russia and the Soviet Union, and to allow students the opportunity to explore an aspect of that history in some depth. In addition, the course will seek to provide a variety of perspectives for thinking about the relationship between science, power, and politics. By the end of the course students will have a working knowledge of Russian and Soviet history and history of science, and experience in critical reading, discussion, presentation, and research into associated topics.

Readings

We will be reading numerous chapters from Loren Graham's textbook on science in Russia and the Soviet Union, and you are strongly advised to purchase a copy of the book. The full details are:

> Loren R. Graham, *Science in Russia and the Soviet Union: A Short History* (Cambridge: Cambridge University Press, 1993) ISBN: 0-521-24566-4

You may also wish to consult general introductions to Russian history during the course. The following are recommended:

- Geoffrey Hosking, *Russian History: A Very Short Introduction* (Oxford University Press, 2012)
- Geoffrey Hosking, *A History of the Soviet Union: 1917-1991* (Fontana, 1992)
- Gregory L. Freeze, *Russia: A History* (Oxford University Press, 1997)
- Richard Pipes, *Russia Under the Old Regime* (Penguin, 1974)
- Nicholas Riasanovsky, *A History of Russia* (Oxford University Press, 1963)

Reading list

Most of the readings for this course can be downloaded from the library's online reading list for HPSC3040. These readings are designated in the list below as (ONLINE READING LIST). Others will need to be accessed directly in the library.

Week 21

Jan 14. Introduction. Jan 16. Discuss Vucinich chapter.

Essential

Alexander Vucinich, "The origins of the scientific attitude in Old Russia," *Science in Russian Culture: a History to 1860* (Stanford, CA.: Stanford University Press, 1963), pp. 3-37. (ONLINE READING LIST)

Additional

Graham, *Science in Russia and the Soviet Union*, 9-16.

W. F. Ryan, "Magic and Divination: Old Russian Sources," in Bernice Glatzer Rosenthal, ed., *The Occult in Russian and Soviet Culture: The Occult and Modern Russian and Soviet Culture* (Ithaca, NY: Cornell University Press, 1997), pp. 35-58. (ONLINE READING LIST)

Sevcenko, Ihor, 'Remarks on the Diffusion of Byzantine Scientific and Pseudo-Scientific Literature among the Orthodox Slavs,' *Slavonic and East European Review*, 1981, 59:321-345 (ONLINE READING LIST)

Week 22

JAN 21 & 23. Science and Patronage: the Imperial Court and the St. Petersburg Academy of Sciences.

Essential

PRIMARY: M. V. Lomonosov, "Oration on the Use of Chemistry," in Henry M. Leicester, ed., *Mikhail Vasil'evich Lomonosov on the Corpuscular Theory* (Cambridge, Mass.: Harvard University Press, 1970). 186-202. (ONLINE https://archive.org/details/mikhailvasilevic017733mbp)

RUSSIA: Werrett, Simon, 'The Schumacher Affair: Reconfiguring Academic Expertise Across Dynasties in Eigheenth-century Russia' *Osiris* Vol. 25: *Expertise and the Early Modern State*, ed. Eric Ash (Chicago, 2010): 104-125. (ONLINE READING LIST)

THEORY: Biagioli, Mario. "Galileo's System of Patronage" *History of Science* 28 (1990): 1-62 (ONLINE READING LIST).

Additional

Graham, *Science in Russia and the Soviet Union*, 16-31.

Michael Gordin, "The Importation of Being Earnest: the Early St. Petersburg Academy of Sciences," *Isis* 91 (2000): 1-31. (ONLINE READING LIST)

Ludmilla Schulze, "The Russification of the St. Petersburg Academy of Sciences and Arts in the eighteenth century," *British Journal for the History of Science* 18 (1985): 305-335. (ONLINE READING LIST)

Alexander Lipski, "The Foundation of the Russian Academy of Sciences." *Isis* 44 (1953): 349-354. (ONLINE READING LIST)

Bruce Moran, "Courts and Academies" in *The Cambridge History of Science Vol. 3 Early Modern Science* (E-BOOK).

Week 23

JAN 28 & 30. Science and Empire: Imperial Russian Voyages of Exploration.

Essential

PRIMARY: Stepan Petrovich Krasheninnikov, *The History of Kamtschatka, and the Kurilski Islands*, trans. James Grieve (Glocester, 1764), 109-120, 169-172 (Eighteenth-century Online)

RUSSIA: J. L. Black, "G. F. Müller and Russian Academy of Sciences Contingent in the Second Kamchatka Expedition, 1733-1743," *Canadian Slavonic Papers*, 1983, 25: 235-252. (ONLINE READING LIST)

THEORY: Kapil Raj, "Beyond Postcolonialism … and Postpositivism: Circulation and the Global History of Science," *Isis* 104 (2013): 337-347 (JSTOR)

Additional

A. E. Sokol, "Russian Expansion and Exploration in the Pacific." *American Slavic and East European Review* 11 (1952): 85-105. (ONLINE READING LIST)

Simon Werrett, 'Russian Responses to the Voyages of Captain Cook,' in *Captain Cook: Explorations and Reassessments*, Glyn Williams, ed. (New York: Boydell & Brewer Press, 2004), pp. 179-200. (ONLINE READING LIST)

Slezkine, Yuri. "Naturalists versus Nations: Eighteenth-Century Russian Scholars Confront Ethnic Diversity," in *Russia's Orient: Imperial Borderlands and Peoples, 1700-1917*, eds. Daniel R. Brower and Edward J. Lazzerini (Bloomington, Indiana, 1997), pp. 27-57. (LIBRARY)

Week 24

FEB 4 & 6. Science as a Spectacle: Instruments and the Display of Power

Essential

PRIMARY: Löwenstern, Hermann Ludwig von, *The First Russian Voyage around the World: The Journal of Hermann Ludwig von Löwenstern, 1803-1806*, Victoria Joan Moessner, ed. (Fairbanks, Alaska, 2003), 217-252. (SSEES R.I LOW) (PHOTOCOPY PROVIDED)

RUSSIA: Simon Werrett, "Technology on Display: Instruments and Identities on Russian Voyages of Exploration". *Russian Review*, Vol. 70, no. 2 (July 2011): 380-396. (ONLINE READING LIST)

THEORY: Simon Schaffer, "Instruments as Cargo in the China Trade," *History of Science* 64 (2006): 217-246.

Additional

Simon Werrett, "The Astronomical Capital of the World: Pulkovo Observatory in the Russia of Tsar Nicholas I" in *The Heavens on Earth: Observatory Techniques in Nineteenth-century Science*, Charlotte Bigg, Otto Sibum, and David Aubin, eds., (Durham, NC: Duke University Press, 2010), pp. 33-57. (ONLINE READING LIST)

Week 25

FEB 11 & 13. Gender and Science in Imperial Russia

Essential

PRIMARY: Anna Leffler, *Sonia Kovalevsky: Biography and Autobiography*, trans. Louise von Cossel (London: W. Scott 1895), 9-49 (ONLINE https://openlibrary.org/books/OL23416807M/Sonia_Kovalevsky)

RUSSIA: Koblitz, Ann Hibner, 'Science, Women, and the Russian Intelligentsia: the Generation of the 1860s', *Isis*, 79 (1988), 208-226. (ONLINE READING LIST)

THEORY: Margaret Rossiter, "A Twisted Tale: Women in the Physical Sciences in

the Nineteenth and Twentieth Centuries," in *The Cambridge History of Science vol. 5: The Modern Physical and Mathematical Sciences*, 54-71 (E-BOOK)

Additional

Gordin, Michael, 'Arduous and Delicate Task: Princess Dashkova, the Academy of Sciences, and the Taming of Natural Philosophy,' in Sue Ann Price, ed., *The Princess & the Patriot: Ekaterina Dashkova, Benjamin Franklin , and the Age of Enlightenment* (Philadelphia: American Philosophical Society, 2006), pp. 3-22. (ONLINE READING LIST)

Olga Valkova, "The Conquest of Science: Women and Science in Russia, 1860–1940," *Osiris*, vol. 23 (2008): *Intelligentsia Science: The Russian Century, 1860–1960*, eds. Michael D. Gordin and Karl Hall (Chicago: University of Chicago Press, 2008): 136-165. (ONLINE READING LIST)

Koblitz, Ann Hibner, *A Convergence of Lives. Sofia Kovalevskaia: Scientist, Writer, Revolutionary* (Boston and Basel: Birkhauser, 1983; revised 2nd ed. New Brunswick, NJ: Rutgers University Press, 1993). (WOMEN'S LIBRARY)

Week 26: Reading Week

Week 27

FEB 25 & 27. Science and Ideology: Evolution in Nineteenth-Century Russia

Essential

PRIMARY: Peter Kropotkin, *Mutual Aid: A Factor of Evolution*, ed. Paul Avrich (London: Allen Lane, 1972) Introduction and chapter 1 (http://www.marxists.org/reference/archive/kropotkin-peter/1902/mutual-aid/index.htm)

RUSSIA: Todes, Daniel P. "Darwin's Malthusian Metaphor and Russian Evolutionary Thought, 1859-1917," Isis 78 (1987): 537-551. (ONLINE READING LIST)

THEORY: Robert M. Young, "Evolutionary Biology and Ideology: Then and Now," *Science Studies*, 1 (1971): 177-206. (http://human-nature.com/rmyoung/papers/paper38h.html)

Additional

Graham, *Science in Russia and the Soviet Union*, 56-75.

Daniel P. Todes, *Darwin Without Malthus: The Struggle for Existence in Russian Evolutionary Thought* (Oxford: Oxford University Press, 1989). (LIBRARY)

Kinna, Ruth, 'Kropotkin's theory of mutual aid in historical context,' *International Review of Social History*, 1995, 40:259-283. (ONLINE READING LIST)

Alexander Vucinich, *Darwin in Russian Thought* (Berkeley, Ca.: University of California Press, 1988). ((ONLINE READING LIST E-BOOK)

James Allen Rogers, 'Russian Opposition to Darwinism in the Nineteenth Century,' *Isis*, 1974, 65:487-505. (ONLINE READING LIST)

Week 28

MAR 4 and 6. Science, Marxism and Revolution

Essential

PRIMARY: V. I. Lenin, *Materialism and Empirico-Criticism* (1908), chapter 5, sections 1-4 (ONLINE: http://www.marxists.org/archive/lenin/works/1908/mec/05.htm)

RUSSIA: Nikolai Krementsov, "Big Revolution, Little Revolution: Science and Politics in Bolshevik Russia," *Social Research* 73 (2006): 1173-1204 (JSTOR)

THEORY: Loren R. Graham, "The Socio-political Roots of Boris Hessen: Soviet Marxism and the History of Science." *Social Studies of Science* 15 (1985): 705-722.

Additional

Graham, *Science in Russia and the Soviet Union*, chapter 4 and 5.

Slava Gerovitch, "'Mathematical Machines' of the Cold War: Soviet Computing, American Cybernetics and Ideological Disputes in the Early 1950s," *Social Studies of Science*, Vol. 31, No. 2, Science in the Cold War (April 2001): 253- 287. (ONLINE READING LIST)

Douglas R. Weiner, "Community Ecology in Stalin's Russia: 'Socialist' and 'Bourgeois' Science," *Isis* 75 (1984): 684-696. (ONLINE READING LIST)

Vucinich, Alexander, 'Soviet Physicists and Philosophers in the 1930s: Dynamics of a Conflict' *Isis*, 1980, 71:236-50. (ONLINE READING LIST)

Richard Stites, *Revolutionary Dreams: Utopian Vision and Experimental Life in the Russian Revolution* (Oxford and New York: Oxford University Press, 1989), chapter 8, 'Utopia in Time: Futurology and Science Fiction', pp. 167-189. (LIBRARY)

Week 29

MAR 11 and 13. Science and Totalitarianism: Stalinism

Essential

PRIMARY: Vernadsky, W. I., "The Biosphere and the Noösphere," *American Scientist* 33 (1945): 1-12 (JSTOR)

RUSSIA: Bailes, Kendall E. 'Soviet Science in the Stalin Period: The Case of V. I. Vernadskii and his Scientific School, 1928-1945,' *Slavic Review*, 1986, 45:20-37. (ONLINE READING LIST)

THEORY: George Orwell, *Nineteen Eighty-Four* (1949), Part 3, chapter 3 (ONLINE - http://www.george-orwell.org/1984/19.html)

Additional

Graham, *Science in Russia and the Soviet Union*, chapter 6

Alexei Kojevnikov, "President of Stalin's Academy: The Mask and Responsibility of Sergei Vavilov." *Isis* 87 (1996): 18-50.

McCutcheon, Robert A. 'The 1936-1937 Purge of Soviet Astronomers,' *Slavic Review*, 1991, 50:100-117. (ONLINE READING LIST)

Josephson, Paul, 'Physics, Stalinist Politics of Science, and Cultural Revolution,' *Soviet Studies*, 40 (1988): 245-65. (ONLINE READING LIST)

Week 30

MAR 18 and 20. Technology in the Cold War

Essential

PRIMARY: "America reacts to Sputnik", in Kevin Hillstrom, ed., *The Cold War: Primary Sourcebook Series* (Detroit: Omnigraphics, 2006), 165-175. (PHOTOCOPY PROVIDED)

RUSSIA: Slava Gerovitch, "Stalin's Rocket Designers' Leap into Space: The Technical Intelligentsia Faces the Thaw," *Osiris*, vol. 23 (2008): *Intelligentsia Science: The Russian Century, 1860–1960*, eds. Michael D. Gordin and Karl Hall (Chicago: University of Chicago Press, 2008): 189-209. (ONLINE READING LIST)

THEORY: Audra J. Wolfe, *Competing with the Soviets: Science, Technology and the State in Cold War America* (Johns Hopkins University Press, 2012), introduction. (ONLINE http://audrajwolfe.com/competing-with-the-soviets/introduction/)

Additional

David Holloway, "Entering the Nuclear Arms Race: The Soviet Decision to Build the Atomic Bomb, 1939-45." *Social Studies of Science* 11 (1981): 159-197. (ONLINE READING LIST)

Slava Gerovitch. "Human-Machine Issues in the Soviet Space Program," in *Critical Issues in the History of Spaceflight*, eds. Steven J. Dick and Roger D. Launius (Washington, D.C.: NASA History Division, 2006), pp. 107-140. (ONLINE READING LIST)

Siddiqi, Asif A., *The Soviet Space Race with Apollo* (University Press of Florida, 2003) (LIBRARY)

Siddiqi, Asif. "Deep Impact: Robert Goddard and the Soviet 'Space Fad' of the 1920s." *History and* Technology 20 (2004): 97-113. (ONLINE READING LIST)

Michael D. Gordin, *Red Cloud at Dawn: Truman, Stalin, and the End of the Atomic Monopoly* (Picador, 2010). (LIBRARY)

Week 31

MAR 25 and 27. Globalized Risk: Soviet Biological Warfare and the End of the USSR

Essential

PRIMARY: Meselson, M. et al (1994), "The Sverdlovsk Anthrax Outbreak of 1979," *Science* 266 (1994): 1202-1207. (ONLINE READING LIST)

RUSSIA: Michael D. Gordin, "The Anthrax Solution: The Sverdlovsk Incident and the Resolution of a Biological Weapons Controversy," *Journal of the History of Biology* 30 (1997): 441-480 (JSTOR)

THEORY: H. M. Collins and Robert Evans, "The Third Wave of Science Studies: Studies of Expertise and Experience," *Social Studies of Science*, 32 (2002): 235-296 (JSTOR).

Additional

Ken Alibek, *Biohazard: The Chilling True Story of the Largest Covert Biological Weapons Program in the World* (London: Arrow, 2000). (Science Short Loan Collection ALI)

Hart, J. 'The Soviet Biological Weapons Programme' in M. Wheelis et al, *Deadly Cultures: Biological Weapons Since 1945* (Harvard University Press, 2006), 132-156. (ONLINE READING LIST)

Leitenberg, Milton and Raymond A. Zilinskas, *The Soviet Biological Weapons*

Program: A History (Cambridge, MA: Harvard University Press, 2012) (LIBRARY)

Important policy information

Details of college and departmental policies relating to modules and assessments can be found in the STS Student Handbook www.ucl.ac.uk/sts/handbook

All students taking modules in the STS department are expected to read these policies.