

Hist. Sci. 637: Studies in the History of Technology

Tue. 12:05-12:55
6304 Social Sciences

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Office Hours: Tue. 1-3 and by appt.

Assignments

Students in 637 will complete all the reading assignments for 337, the journal assignment for 337, additional readings as described below, and three book reviews of medium length (5-7 pgs.).

Readings

The additional reading materials for discussion on Tuesday consist of historiographic essays and other materials which complement the readings from 337. They are listed below and will be available in the non-circulating collections of the UW libraries or in the History of Science Reading Room. The History of Science Reading Room is directly across the hall from my office on the 7th floor of Social Sciences. The readings will be on the narrow shelves on the left side of the room. Materials in the reading room may be read there or removed briefly for photocopying.

Book Reviews

Students in 637 will write three book reviews of significant texts in the history of technology. We will discuss the goals and characteristics of academic book reviews before students submit their first review. The table below gives suggested texts for review. You may review other books with my prior approval.

Evaluation

Grades will generally be calculated as follows:

- Readings journal, 40%
- Three book reviews, 20% each

Course Schedule

Week 1: Orientation

No readings.

No review suggestions.

Week 2: Introduction and Determinism

Readings

MacKenzie, Donald A., and Judy Wajcman. "Introductory Essay: The Social Shaping of Technology." In *The Social Shaping of Technology*, 3-27. Buckingham: Open University Press, 1999.

Heilbroner, Robert L. "Do Machines Make History?" and "Technological Determinism Revisited." In *Does Technology Drive History?: The Dilemma of Technological Determinism*, ed. Merritt Roe Smith and Leo Marx, 53-78. Cambridge: MIT Press, 1994.

Mazlish, Bruce. "The Art of Reviewing." *Perspectives* 39 (February 2001): 15-18.

Review Suggestions

Chandler Jr., Alfred D. "The United States: Evolution of Enterprise." *Cambridge Economic History of Europe* 7 (198x): 70-133.

White Jr., Lynn. *Medieval Technology and Social Change*. Oxford: Oxford University Press, 1962.

Week 3: Environment

Readings

White Jr., Lynn Townsend. "The Historic Roots of Our Ecological Crisis." In *Machina Ex Deo: Essays in the Dynamism of Western Culture*, 75-94. Cambridge: MIT Press, 1968.

Stine, Jeffrey K., and Joel A. Tarr. "At the Intersection of Histories: Technology and the Environment." *Technology and Culture* 39 (1998): 601-640.

Review Suggestions

Squatriti, Paolo. *Water and Society in Early Medieval Italy, AD 400-1000*. Cambridge: Cambridge University Press, 1998.

Steinberg, Theodore. *Nature Incorporated: Industrialization and the Waters of New England*. Studies in environment and history. Cambridge: Cambridge University Press, 1991.

Crosby, Alfred W. *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*. Studies in environment and history. Cambridge: Cambridge University Press, 1986.

Week 4: Military

Readings

Phillips, Gervase. "Longbow and Hackbutt: Weapons Technology and Technology Transfer in Early Modern England." *Technology and Culture* 40 (July 1999): 576-593.

Hacker, Barton C. "Military Institutions, Weapons, and Social Change: Toward a New History of Military Technology." *Technology and Culture* 35 (October 1994): 768-834.

Roland, Alex. "Science, Technology, and War." *Technology and Culture* 36 (April 1995): s83-s99.

Review Suggestions

Hall, Bert S. *Weapons and Warfare in Renaissance Europe: Gunpowder, Technology, and Tactics*. Johns Hopkins studies in the history of technology; 22. Baltimore: Johns Hopkins University Press, 1997.

Leslie, Stuart W. *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford*. New York: Columbia University Press, 1993.

Smith, Merritt Roe. *Harpers Ferry Armory and the New Technology: The Challenge of Change*. Ithaca: Cornell University Press, 1977.

Week 5: Social Construction

Readings

Pinch, Trevor J., and Wiebe E. Bijker. "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other." In *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, ed. Wiebe E. Bijker, Thomas Parke Hughes, and T. J. Pinch, 17-50. Cambridge: MIT Press, 1987.

Callon, Michel. "Society in the Making: The Study of Technology as a Tool for Sociological Analysis." In *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, ed. Wiebe E. Bijker, Thomas Parke Hughes, and T. J. Pinch, 83-103. Cambridge: MIT Press, 1987.

Review Suggestions

MacKenzie, Donald A. *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance*. Inside technology. Cambridge: MIT Press, 1990.

Latour, Bruno. *The Pasteurization of France*. Cambridge: Harvard University Press, 1988.

Week 6: No Industrial Revolution

Readings

Fores, M. "The Myth of the Industrial Revolution." *History* 66 (1981): 181-198.

Berg, M., and P. Hudson. "Rehabilitating the Industrial Revolution." *Economic History Review* 2d ser. 45 (1992): 24-50.

Review Suggestions

Hobsbawm, E. J., and Chris Wrigley. *Industry and Empire: From 1750 to the Present Day*. revised and updated ed. London: Penguin Books, 1999.

Berg, Maxine. *The Age of Manufactures, 1700-1820: Industry, Innovation, and Work in Britain*. 2d ed. London: Routledge, 1994.

Week 7: Internalism

Readings

Ferguson, Eugene S. "The Steam Engine Before 1830." In *Technology in Western Civilization*, ed. Melvin Kranzberg and Carroll W. Pursell, Vol. 1. The Emergence of Modern Industrial Society, Earliest Times to 1900, 245-263 and 755-756. Oxford: Oxford University Press, 1967.

Usher, Abbot Payson. "The Textile Industry, 1750-1830." In *Technology in Western Civilization*, ed. Melvin Kranzberg and Carroll W. Pursell, Vol. 1. The Emergence of Modern Industrial Society, Earliest Times to 1900, 230-245 and 754-755. Oxford: Oxford University Press, 1967.

Review Suggestions

Hoddeson, Lillian, Paul W. Henriksen, Roger A. Meade, and Catherine Westfall. *Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945*. Cambridge: Cambridge University Press, 1993.

White, John H. *The John Bull: 150 Years a Locomotive*. Washington, D.C.: Smithsonian Institution Press, 1981.

Week 8: Imperialism

Readings

Ward, J. R. "The Industrial Revolution and British Imperialism, 1750-1850." *Economic History Review* 47, ns (February 1994): 44-65.

Review Suggestions

Adas, Michael. *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance*. Cornell studies in comparative history. Ithaca: Cornell University Press, 1989.

Cipolla, Carlo M. *Guns, Sails and Empires: Technological Innovation and the Early Phases of European Expansion, 1400-1700*. New York: Minerva Press, 1965.

Week 9: Labor

Readings

Scranton, Philip. "None-Too-Porous Boundaries: Labor History and the History of Technology." *Technology and Culture* 29 (1988): 744-778.

Smith, Merritt Roe. "Industry, Technology, and the 'Labor Question' in Nineteenth-Century America: Seeking Synthesis." *Technology and Culture* 32 (1991): 555-570.

Review Suggestions

Montgomery, David. *Workers' Control in America: Studies in the History of Work, Technology, and Labor Struggles*. Cambridge: Cambridge University Press, 1979.

Gutman, Herbert George. *Work, Culture, and Society in Industrializing America: Essays in American Working-Class and Social History*. New York: Knopf, 1976.

Week 10: Gender

Readings

McGaw, Judith A. "No Passive Victims, No Separate Spheres: A Feminist Perspective on Technology's History." In *In Context: History and the History of Technology Essays in Honor of Melvin Kranzberg*, ed. Melvin Kranzberg, Stephen H. Cutcliffe, and Robert C. Post, 172-191. Bethlehem: Lehigh University Press, 1989.

Lerman, Nina E., Arwen Palmer Mohun, and Ruth Oldenziel. "The Shoulders We Stand On and the View From Here: Historiography and Directions for Research." *Technology and Culture* 38 (January 1997): 9-30.

Review Suggestions

McGaw, Judith A. *Most Wonderful Machine: Mechanization and Social Change in Berkshire Paper Making, 1801-1885*. Princeton: Princeton University Press, 1987.

Cowan, Ruth Schwartz. *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*. New York: Basic Books, 1983.

Week 11: Progress

Readings

Smith, Merritt Roe. "Technology, Industrialization, and the Idea of Progress in America." In *Responsible Science*, ed. Kevin Byrne, 1-30, 1986.

Staudenmaier, John M. "Perils of Progress Talk: Some Historical Considerations." In *Science, Technology, and Social Progress*, ed. Steven L. Goldman, 268-293. Bethlehem: Lehigh University Press, 1989.

Review Suggestions

Noble, David F. *Forces of Production: A Social History of Industrial Automation*. New York: Knopf, 1984.

Week 12: Systems

Readings

Hughes, Thomas P. "The Electrification of America: The Systems Builders." *Technology and Culture* 20 (January 1979): 124-161.

Hughes, Thomas Parke. "Introduction." In *Networks of Power: Electrification in Western Society, 1880-1930*, 1-17. Baltimore: Johns Hopkins University Press, 1983.

Review Suggestions

Douglas, Susan J. *Inventing American Broadcasting, 1899-1922*. Johns Hopkins studies in the history of technology; new ser., no. 9. Baltimore: Johns Hopkins University Press, 1987.

Hughes, Thomas Parke. *Networks of Power: Electrification in Western Society, 1880-1930*. Baltimore: Johns Hopkins University Press, 1983.

Week 13: Science & Technology

Readings

Layton, Edwin T. "Mirror-Image Twins: The Communities of Science and Technology in Nineteenth Century American." *Technology and Culture* 18 (1974): 562-580.

Dennis, Michael Aaron. "Accounting for Research: New Histories of Corporate Laboratories and the Social History of American Science." *Social Studies of Science* 17 (1987): 479-518.

Review Suggestions

Gillespie, Richard. *Manufacturing Knowledge: A History of the Hawthorne Experiments*. Studies in economic history and policy. Cambridge: Cambridge University Press, 1991.

Reich, Leonard S. *The Making of American Industrial Research: Science and Business at GE and Bell, 1876-1926*. Studies in economic history and policy. The United States in the twentieth century. Cambridge: Cambridge University Press, 1985.

Noble, David F. *America By Design: Science, Technology, and the Rise of Corporate Capitalism*. New York: Knopf, 1977.

Week 14: Alternatives to Mass Production

Readings

Sabel, Charles, and Jonathan Zeitlin. "Historical Alternatives to Mass Production." *Past and Present* 108 (1985): 133-176.

Scranton, Philip. "Manufacturing Diversity: Production Systems, Markets, and an American Consumer Society, 1870-1930." *Technology and Culture* 35 (July 1994): 476-505.

Review Suggestions

Scranton, Philip. *Proprietary Capitalism: The Textile Manufacture at Philadelphia, 1800-1885*. Cambridge: Cambridge University Press, 1983.

Week 15: The Discipline

Readings

Marx, Leo. "Review of Cutcliffe and Post, *In Context*." *Technology and Culture* 32 (1991): 394-96.

Roland, Alex. "What Hath Kranzberg Wrought? Or, Does the History of Technology Matter?" *Technology and Culture* 38 (July 1997): 697-713.

Staudenmaier, John M. "Recent Trends in the History of Technology." *American Historical Review* 95 (June 1990): 715-725.

Review Suggestions

Staudenmaier, John M. *Technology's Storytellers: Reweaving the Human Fabric*. Cambridge: The MIT Press, 1985.

