HIST-2020: WOMEN, SCIENCE AND TECHNOLOGY

Cuyahoga Community College

Viewing: HIST-2020 : Women, Science and Technology

Board of Trustees:
2012-05-24

Academic Term:
2012-08-27

Subject Code
HIST - History

Course Number:
2020

Title:
Women, Science and Technology

Catalog Description:
Study of the historical participation and exclusion of women from the gendered realms of science, technology, engineering, and mathematics (STEM). Course examines the gendered discourses and rationale around scientific knowledge, power, and the gendered body. This course places emphasis on the experiences of women in the Western STEM fields. Students will apply feminist science studies and critiques to understand and assess both historical and contemporary challenges regarding women in the fields of science, women's health care and sexuality, women's experiences in the fields of contemporary technology and engineering industries.

Credit Hour(s):
3

Lecture Hour(s):
3

Requisites

Prerequisite and Corequisite
WGS-1510 Introduction to Women's Studies; or ENG-1010 College Composition I, or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment.

Outcomes

Course Outcome(s):
Analyze and articulate gender theory as it applies specifically in the realms of scientific and technological development.

Objective(s):
1. Examine through primary and secondary resources the 'Feminist critique' and gender theory of science.
2. Trace the historical development and evolution of the " sciences" focusing on gender.
3. Evaluate the appearance and claims of "objective science" as it pertains to all genders.
4. Discuss and evaluate the feminist critique of education as it pertains to science and medicine.
5. Describe a current scientific controversy employing feminist scholarship and terminology.

Course Outcome(s):
Utilize and apply scientific theory and terminology in analysis of gender constructs.

Objective(s):
1. Analyze examples of pervasive gendered scientific dogmas.
2. Interpret the use of language and concepts linking "professionalism" and "sexism"
3. Evaluate and discuss the conceptualization and impact of "expertise".
4. Trace changes in the nature and authority of scientific research through comparative historical analysis.

Course Outcome(s):

Apply interdisciplinary terminology, concepts and theories to analyze, compare, contrast, evaluate and summarize information on gender, science and technology .

Objective(s):

1. Survey historical, philosophical, sociological, anthropological, psychological and literary studies of science.
2. Critically appraise public media images.
3. Evaluate bias in purportedly 'objective' documents, data, tests, books, internet, etc.

Course Outcome(s):

Discuss the meaning of "scientific expertise" and analyze its impact on public policy (law and society).

Objective(s):

1. Examine the history of science and technology as a cultural force in our society.
2. Create a basic timeline of major scientific developments and the changing nature of research.
3. Compare non-western scientific and medical practices.
4. Evaluate women's role and power in the creation of scientific knowledge and technological development.
5. Identify factors influencing women's opportunities and participation in the sciences.
6. Utilize on-line research skills through visits to museums, library and scientific collections to reveal public responses to medical and scientific professionals.

Course Outcome(s):

Examine the specific gender application of science and technology with regards to the fields of Health and Medicine.

Objective(s):

1. Classify current biological understandings of men's and women's bodies.
2. Identify how gender impacts the utilization of technology and treatment of disease.
3. Find online and published sources that demonstrate the impact of gender on past and present research fiscal priorities.
4. Recognize the nuance of change in our cultural understandings of gender and demonstrate the consequent impact in health care policy and delivery.

Course Outcome(s):

Investigate the specific gender application of science and technology with regards to business and industry.

Objective(s):

1. Define and describe feminist theories of work and technology.
2. Compare and contrast industrial development (tools, appliances, costs) based on gendered constructs.
3. Compare and contrast gendered marketing the dissemination of scientific and technical knowledge.

Methods of Evaluation:

1. Student research and report on a specific scientific or technology profession, experiment or policy using gender theory, demographic and statistical data from primary and secondary sources.
2. Readnbsp;and evaluate a professional publication in the fields of Health, Medicine, or Technology to describe the gender application of science and technology
3. Presentationnbsp;or leading class discussionnbsp;on a particular aspect of womenrsquo;s health or technologynbsp;
4. Written Assignments to develop research skills and critical evaluation of issues:nbsp;
    a. Biographies of women in the sciences
    b. Chronologies of scientific disciplines, education and public policy
    c. Interpretation of gender bias in public laws or research protocols
    d. Analysis of current issuesnbsp;dealing with the application of technology and/or delivery ofnbsp; health care (Example: pregnant women and biohazards in the workplace; use of genome research with regard to human embryos;nbsp; delivery and priorities of healthcare).
5. Journal : reflection and/or collection of examples of topical issues and events.

Course Content Outline:

1. Introduction and reflections on women, science, gender, and history.
    a. Historiography of science and technology--overviewnbsp;
    b. Power and ldquo;expertiserdquo; in modern society.
    c. Gender Theory and Feminist critique of science
    d. Role of government in framing "science"
    e. Role of education in shaping cultural and social normsnbsp;
    f. Resources and terminology
2. Gender and religion in the origins of science
    a. Early Civilizations & views of science in medicine, astronomy, engineering
        i. Egypt
        ii. Greek and Roman
        iii. Christianity & Western thought
    b. Childbirth & Motherhood ndash; relationships and medicine
        i. Mother earth & power
        ii. Childbirth and Ceasarian Section
        iii. Priests, physicians & midwives
    c. Interplay between religion, science and education
        i. Monasteries & convents
        ii. Universities
        iii. Apprenticeships
3. The Scientific Revolution and its impact on women.
    a. Renaissance enlightenment thought and science.
    b. Scientific theory and the emergence of research.
    c. Religion, gendered roles & science
4. Industrial Revolution and work.
    a. Trades, "putting-out" system, & factories
    b. Womenrsquo;s work & tools vs. menrsquo;s work & tools
    c. Impact of technology & biology
5. Professionalization in science
    a. Conceptualization of ldquo;expertiserdquo;
    b. Educational opportunities and limits.
    c. Licensure ndash; public policy and gender
6. Medical and scientific view of women
    a. Women as patient: diseases & medical conditions
        i. Childbirth
        ii. Distemper - Victorian fragility
        iii. Feminist theory ndash; ldquo;Women as Otherrdquo;
    b. Women as health care workers
        i. 19th century nursing, social work & voluntarism
        ii. Limits: education, licensure, professional practice
7. Modern Science and Women.
    a. Atomic science and information Science
    b. Social Reform: access & education
        i. Womenrsquo;s rights, education, public policy
        ii. Womenrsquo;s Liberation, Civil Rights & Title IX
        iii. Recent changes in health care legislation affecting practice & gender
8. Contemporary medical and scientific view of women
    a. Women as patient: diseases & medical conditions
        i. Childbirth
        ii. Womenrsquo;s health
        iii. LGBTF Theory
        iv. Women as participants in medical research
    b. Women as health care workers
        i. Medical practice & allied health
        ii. Public policy: education, licensure, professional practice & ethics
9. Industry, manufacturing and the lsquo;hardrsquo; sciences

   a. Educating women in the aciences
      i. Math & Engineering
      ii. Professions
   b. Gendered work, safety and public policy
10. Gender and information technologynbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp; 1.nbsp;nbsp; Structuring interests in society and in educationnbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp;nbsp; 2.nbsp;nbsp; Non-traditional pathways to IT and to the workforce
11. Contemporary Images and Opportunities
    a. Ecofeminism
    b. Globalism

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Religious Accommodation

Before reviewing the course schedule, students should carefully review the following religious accommodation policy and other required instructional policies:

Religious Accommodation:

Students seeking an accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor with written notice of the specific dates for which the student requires an accommodation and must do so not later than fourteen (14) days after the first day of instruction. Please submit requests for accommodations at this link: https://portal2.tri-c.edu/ReligiousAccommodation/ Religious Accommodation Form. Students with questions about their religious accommodations under Ohio's Testing Your Faith Act may contact the College's Office of General Counsel and Legal Services by phone at 216.987.4856 or via email at legal@tri-c.edu.

Other Required Instructional Policies:

https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Resources for the Instructor

Kourany, Janet A. *The Gender of Science.* Upper Saddle River, N.J.: Prentice Hall, 2002.

Lerman, Nina E., Oldenziel, Ruth and Mohun Mahowald, Arwen P. eds. *Gender and Technology: A Reader.* Baltimore, MD: Johns Hopkins University Press, 2003.

Creager, Angela N.H, Elizabeth A. Lunbeck and Londa Schiebinger, eds. *Feminism in Twentieth-Century Science, Technology, and Medicine.* Chicago: University of Chicago Press, 2001.

Whaley, Leigh Ann. *Women's History as Scientists: A Guide to the Debates.* Santa Barbara, CA: ABC-CLIO, 2003.

Cohoon, J. McGrath and William Aspray, eds. *Women and Information Technology: research on underrepresntation.* Cambridge: MIT Press, 2006.

Hayden, Judy A. ed. *The New Science and Women's Literary Discourse: Prefiguring Frankenstein.* NY: Palgrave McMillan, 2011.

Additional Resources for the Instructor

Books:

Abir-Am, Pnina and Outram, Dorinda, eds., *Uneasy Careers and Intimate Lives, Women in Science, 1789-1979*. New Brunswick: Rutgers University Press, 1987.

Burton, June K., foreword by Susan P. Conner.nbsp; *Napoleon and the Woman Question: Discourses of the Other Sex in French Education, Medicine, and Medical Law 1799-1815.* Lubbock, TX: Texas Tech University Press, 2007.

Bystydzienski, Jill M., and Sharon R. Bird eds.nbsp; Removing Barriers : Women in Academic Science, Technology, Engineering, and Mathematics. Bloomington: Indiana University Press, 2006.

Canel, Annie, Ruth Oldenziel, and Karin Zachmann, eds. *Crossing Boundaries, Building Bridges: Comparing the History of Women Engineers, 1870s-1990s*.nbsp; London ; New York: Routledge, 2003.*nbsp;*

Cockburn, Cynthia. and Ormrod,nbsp;Susan *Gender and Technology in the Making*. U.S.A.: Sage Publications, 1993.*nbsp;*

Cowan, Ruth Schwartz.nbsp; *A Social History of American Technology*. NY: Oxford University Press, 1997.

Fausto-Sterling, Anne.nbsp; *Myths of Gender: Biological Theories about Men and Women.nbsp;* 2nd ed. NY: Basic Books, 1992.

Gaard, Greta. Ed. *Ecofeminism: Women, Animals, Nature*. Philadelphia, PA: Temple University Press, 1993.

Green, Monica. *Making Womenrsquo;s Medicine Masculine: The Rise of Male Authority in Pre-modern Gynaecology*. NY: Oxford University Press, 2008.

Harding, Sandra.nbsp; *Whose Science, Whose Knowledge?: Thinking from Womenrsquo;s Lives.* Ithica, NY: Cornell University Press, 1991.

Jardins. Julie des.nbsp; *The Madame Curie Complex : The Hidden History of Women in Science*.nbsp; New York, NY : Feminist Press at the City University of New York, 2010.

Jacobi, Mary Putnam & Carla Bittel.nbsp; The Politics of Medicine in Nineteenth-Century America.nbsp; Chapel Hill: University of North Carolina Press, 2009.

Keller, Evelyn Fox and Longino, Helen. eds. *Feminism and Science*. Oxford: Oxford University Press, 1996.

Koblitz, Ann Hibner.nbsp; *A Convergence of Lives: Sofia Kovalevskaia: Scientist, Writer, Evolutionary*. NJ:nbsp;Rutgers University Press, 1998; 1993.

Kohlstedt, Sally Gregory and Longino, Helen. *Women, Gender, and Science: New Directions*. Chicago: University of Chicago Press, 1997.

Laslett, Barbara, ed. et al, *Gender and Scientific Authority*, Univ. of Chicago Press, Chicago, IL, 1996.

Levin, Miriam R. *Defining Womenrsquo;s Scientific Enterprise : Mount Holyoke Faculty and the Rise of American Science*. Hanover: University Press of New England, 2005.

Leavitt J.W., ed. *Women and Health in America: Historical Readings*. Second revised edition, Madison: University of Wisconsin Press, 1999.

Kozai, Yoshihide, et al., eds.nbsp; *My life : Twenty Japanese Women Scientists*. Tokyo, Japan: Uchida Rokakuho, 2001.

MacKenzie, D. and Wajcman, J. eds. *The Social Shaping of Technology* 2nd ed. Philadelphia: Open University Press, 1999.

McMullin. *Age, Gender, and Work:nbsp; Small Information Technology Firms in the New Economy*.nbsp; Vancouvery:nbsp; UBC Press, 2011.

Merchant, Carolyn. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. New York: Harper and Row, 1980.

Morantz-Sanchez, Regina. *Sympathy and Science, Women Physicians in American Medicine.* Chapel Hill: University of North Carolina Press, 2000.

Rothschild, Joan. Ed. *Machina Ex Dea: Feminist Perspectives on Technology*. New York: Pergamon, 1983.

Rossiter, Margaret. *Women Scientists in America, Struggles and Strategies to 1940.* Baltimore: Johns Hopkins University Press, 1982.

Russett, Cynthia. *Sexual Science: The Victorian Construction of Womanhood.* Cambridge: Harvard University Press, 1989.

Schiebinger, Londa. *Has Feminism Changed Science?* Cambridge: Harvard University Press, 1999.

Scott-Dixon. *Doing IT:nbsp; Women Working in Information Technology*.nbsp; Toronto:nbsp; Sumach Press,k 2004.

Selin, Helaine, & Pamela K. Stone, eds. *Childbirth Across Cultures: Ideas and Practices of Pregnancy, Childbirth and the Postpartum.* New York : Springer Verlag, 2009.

Sonnert, Gerhard. *Who Succeeds in Science: The Gender Dimension.* New Brunswick,nbsp; N.J.:nbsp; Rutgers University Press, 1995.

Terry, Jennifer, and Calvert, Melodie, eds., *Processed Lives: Gender and Technology in Everyday Life*, London, United Kingdom: Routledge, 1997.

Thom, Mary, *Balancing the Equation: Where are Women and Girls in Science, Engineering and Technology?* New York: National Council for Research on Women, 2001.

Yaszek, Lisa.nbsp; *Galactic Suburbia : Recovering Womenrsquo;s Science Fiction*. Columbus: nbsp;Ohio State University Press, 2008.

Zuckerman, Harriet, Cole, Jonathan R. and Bruer, John T. eds. *The Outer Circle: Women in the Scientific Community*. New York: Norton, 1991.

Articles:

Armstrong, Victoria. ldquo;Hard bargaining on the hard drive: gender bias in the Music Technology Classroom.rdquo; *Gender & Education*. July 2008, Vol. 20 Issue 4, p375-386.

Cozza, Michela. ldquo;Bridging Gender Gaps, Networking in Computer Science.rdquo;Gender, Technology & Development.; July 2011, Vol. 15 Issue 2, p319-338.

Cozzens, Susan E.nbsp; ldquo;Gender Issues in US Science and Technology Policy: Equality of What?rdquo; *Science & Engineering Ethics.* 15 September 2008,14(3): pp. 345-56.

Fountain, Jane. ldquo;Constructing the information society: women, information technology, and design.rdquo; *Technology in Society* Volume 22, Issue 1 (http://www.sciencedirect.com/science/?_ob=PublicationURL&_hubEid=1-s2.0-S0160791X00X00206&_cid=271744&_pubType=JL&view=c&_auth=y&_acct=C000228598&_version=1&_urlVersion=0&_userid=10&md5=971e8e January 2000, Pages 45-62.

Herring, Susan C.; Marken, James A.nbsp; ldquo;Implications of Gender Consciousness for Students in Information Technologyrdquo;.nbsp; *Women"s Studies.* Apr/May2008, Vol. 37 Issue 3, p229-247.

Rosser, Sue V.nbsp; ldquo;The Gender Gap in Patenting:nbsp; Is Technology Transfer a Feminist Issue?rdquo; *NWSA Journal*.nbsp; Summer2009, Vol. 21 Issue 2, p65-85.

Venkatesh, Viswaneth.nbsp; ldquo;Why Donrsquo;t Men Ever Stop to Ask for Directions? Gender, Social Influence, and their Role in Technology Acceptance and Usage Behavior.rdquo; *MIS Quarterly* Vol. 24, No. 1, Mar. 2000 (http://www.jstor.org/stable/i363342/) p. 115-139.

Wajcman, Judy. ldquo;From Women and Technology to Gendered Technoscience.rdquo;nbsp; *Information, Communication & Society*. Jun 2007, Vol. 10 Issue 3, p287-299.

Xu, Yonghong. ldquo;Gender Disparity in Stem Disciplines: A Study of Faculty Attrition and Turnover Intentions.rdquo; *Research in Higher Education*; Nov 2008, Vol. 49 Issue 7, p607-628.

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