

Science and Technology Beyond Borders
HTS 6124

Instructors: Wenda Bauchspies, John Krige, Laura Bier, and Jenny Smith
(One week with Shatakshee Dhongde in Economics)

Course Description: This course moves discussions of science and technology beyond traditional boundaries into new spaces in order to address the impacts of science and technology on development and modernization. It will explore how notions of development and modernity have shaped science and technology and vice versa.

Introduction: The objective of this course is to introduce students to using a sociological, cultural, philosophical and historical imagination to explore science, modernization, development, and technology through classroom discussions, readings and assignments. Science and technology have had a major role as means, instruments, and carriers of development and modernization. This course will look at the far-reaching impacts of science and technology on development, colonialism and modernization, as well as how notions of development and modernity have impacted and shaped modern science and technology. Development, modernization, science, and technology once believed to be unquestionable goods for society are now being questioned, contested, challenged and criticized; the course will introduce students to some of the major works and authors working within social theory that address this nexus of progress, innovation, and the future.

Books

Core texts:

- Said, Edward W. 1978. *Orientalism*. New York: Pantheon Books.
- Said, Edward W. 1993. *Culture and imperialism*. New York: Knopf.
- Michael Adas *Machines as the Measure of Men* Cornell University Press 1989
- Arturo Escobar *Encountering Development: the making and unmaking of the 3rd world* Princeton University Press, Princeton 1995
- Scott, James C. 1998. *Seeing like a state: how certain schemes to improve the human condition have failed*. New Haven: Yale University Press.
- James Ferguson *Expectations of Modernity: Myths and Meaning of Urban Life on the Zambian Copperbelt* Berkeley: University of California Press, 1999
- Gupta, Akhil. 1998. *Postcolonial developments: agriculture in the making of modern India*. Durham: Duke University Press.
- Chandra Talapade Mohanty *Feminism Without Borders: decolonizing theory, practicing solidarity* Duke University Press, Durham and London 2003
- Cooper, Frederick. 2005. *Colonialism in question: theory, knowledge, history*. Berkeley: University of California Press.

Texts for last 6 weeks that may vary by instructor and will also be Potential Texts for the Book Review Assignment:

- Adams V. and Stacey Leigh Pigg Edited by *Sex and Development* Duke Univ Press, Durham and London 2005
- Anderson, Warwick. 2003. *The cultivation of whiteness: science, health and racial destiny in Australia*. New York: Basic Books.
- Anderson, Warwick. 2006. *Colonial pathologies: American tropical medicine, race, and hygiene in the Philippines*. Durham: Duke University Press.
- Arnold, David. 2000. *Science, technology, and medicine in colonial India*. New York: Cambridge University Press.
- Bonneuil C., Joly P.-B., and Marris C. 2008. "Disentrenching experiment: The construction of GM-Crop field trials as a social problem". *Science Technology and Human Values*. 33 (2): 201-229.
- Bonneuil, C. 1999. "Penetrating the Natives: Peanut Breeding, Peasants and the Colonial State in Senegal (1900-1950)1". *Science Technology & Society*. 4 (2): 273-302.
- Bonneuil, C. 2001. "Science and State Building in Late Colonial and Postcolonial Africa, 1930-1970". *OSIRIS -BRUGGE THEN PHILADELPHIA-*. 15: 258-281.
- Bray Francesca *The Rice Economies: Technology and Development in Asian Societies* University California Press 1986
- Briggs, Laura. 2002. *Reproducing empire race, sex, science, and U.S. imperialism in Puerto Rico*. Berkeley: University of California Press.
- Chakrabarty, Dipesh. 2002. *Habitations of modernity: essays in the wake of subaltern studies*. Chicago: University of Chicago Press.
- Comaroff, Jean, and John L. Comaroff. 2012. *Theory from the South: or, How Euro-America is evolving toward Africa*. Boulder, Colo: Paradigm Publishers.
- Cooper, Frederick, and Randall M. Packard. 1997. *International development and the social sciences essays on the history and politics of knowledge*. Berkeley: University of California Press.
<http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=41865>.
- Fairhead, James, and Melissa Leach. 1996. *Misreading the African landscape: society and ecology in a forest-savanna mosaic*. Cambridge: Cambridge University Press.
- Fairhead, James, and Melissa Leach. 2003. *Science, society and power: environmental knowledge and policy in West Africa and the Caribbean*. Cambridge, UK: Cambridge University Press.
- Falola, Toyin, and M. N. Amutabi. 2011. *Perspectives on the African environment, science and technology*. Trenton, NJ: Africa World Press.
- Franklin, Sarah *Dolly Mixtures* Duke Univ Press 2007
- Harding, Sandra *Sciences from Below: Feminism, Postcolonialities, and Modernities* Duke University Press, 2008.
- Hecht, Gabrielle. 2012. *Being nuclear: Africans and the global uranium trade*. Cambridge, Mass: MIT Press.
- Josephson, Paul R. 2004. *Resources under regimes: technology, environment, and the state*. Cambridge, Mass: Harvard University Press.
- Khagram, Sanjeev *Dams and Development* Cornell 2004
- Mitchell, Timothy. 2002. *Rule of experts Egypt, techno-politics, modernity*. Berkeley: University of California Press.
<http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=90542>.

Mitchell, Timothy. Ed. 2000. *Questions of modernity*. Minneapolis: University of Minnesota Press.

Moon, Suzanne. 2007. *Technology and ethical idealism: a history of development in the Netherlands East Indies*. Leiden: CNWS Publications.

Moseley, William G., and Leslie Gray. 2008. *Hanging by a thread: cotton, globalization, and poverty in Africa*. Athens, Ohio: Ohio University Press.

Nader, Laura “Naked Science: Anthropological Inquiry into Boundaries, Power and Knowledge” Routledge, 1996 (selected chapters)

Nandy, Ashis Editor *Science, Hegemony and Violence* Oxford 1988

Osborne, Michael A. 1994. *Nature, the exotic, and the science of French colonialism*. Bloomington: Indiana University Press.

Prakash, Gyan. 1995. *After colonialism: imperial histories and postcolonial displacements*. Princeton, N.J.: Princeton University Press.

Raina, Dhruv, and S. Irfan Habib. 2004. *Domesticating modern science a social history of science and culture in colonial India*. New Delhi: Tulika Books.

Raina, Dhruv. 2003. *Images and contexts: the historiography of science and modernity in India*. New Delhi: Oxford University Press.

Rajan, S. Ravi “Science, state and violence: An indian critique reconsidered Environmental Studies”, *Science as Culture* 14:3, 265-281. 2005

Raudzens, George. 2001. *Technology, disease, and colonial conquests, sixteenth to eighteenth centuries: essays reappraising the guns and germs theories*. Leiden: Brill.

Sen, Amartya. 1999. *Development as freedom*. New York: Knopf.

Sen, Gita and Caren Grown *Development , Crises, and Alternative Visions: Third World Women’s Perspectives* Monthly Review Press 1987

Smith, James *Science and Technology for Development: Development Matters* Zed Books London 2009

Social Studies of Science Vol 32 Nos 5-6 October-December 2002

Stamp, Patricia *Technology, Gender and Power in Africa* IDRC, Ontario 1990 chps 3, 4, 6

Tsing, Anna Lowenhaupt *Friction: An ethnography of global connection* Princeton University Press, Princeton 2005

Sardar, Ziauddin. 1988. *The Revenge of Athena: science, exploitation, and the Third World*. London: Mansell.

Typical Seminar Breakdown:

Week	Reading
7 Jan	Adas
14	Said (excerpts)
21	Escobar
28	Scott
4 Feb	Akhil
11	Ferguson

18	Mohanty
25	Cooper
4 March	Anderson
11	Tsing
25	Mitchell
1 April	Bray
8	Comaroff
15	Briggs
22	Dead Week
28	Presentations

Course Requirements:

Weekly **contribute to the Reading Blog** with both answers and questions that will help to focus your thoughts and to articulate the focus, problem, approach and perspective of the reading as well as to identify the importance of the reading in your work (10 pts).

Monitor and Guide the Blog once or twice during the semester (40 pts). You will be responsible for monitoring the blog, ensuring it maintains momentum by asking questions, focusing the discussion and summarizing major points.

11 March: **Book Review** (40 pts) due of a book of your choice within the domain of science, technology and modernization/development. Please check out the journals of the field for a sample and length of a book review. (In STS: *Science, Technology, and Human Values*, *Social Studies of Science, Technology and Culture*, to name a few examples. In Development Studies: *Development and Change*, *Development in Practice*, *Journal of Development Studies*, *Journal of International Development*, *Sustainable Development*.) If you have questions about what book to read, please consult with me and once you have selected your book, let me know what book you are planning to read.

Presentation of your **work in progress** for feedback from the class (50pts). **28 Jan:** be prepared to speak to the class for 5-10 minutes about what idea you are thinking of exploring and how you might approach it. **11 Feb:** have a very general outline of what your paper might look like to share with the class. **11 March:** have a more concrete outline with beginning bibliography of what shape your question, paper is taking. **22 April/28 April:** final presentation of where the paper went – this one will be more formal and be 10-15 minutes.

Final Paper: Research paper on topic of your choice related to science, technology and modernization/development. Approximately 30 pages. (100pts) This paper can feed into your dissertation or master thesis project. Please keep me posted as to the direction and focus of your paper through out the semester.

Grading Scale: Your Points/Total Points = 90% and above = A

Your Points/Total Points = 80% to 89% = B
Your Points/Total Points = 70% to 79% = C
Your Points/Total Points = 60% to 69% = D
Your Points/Total Points = less than 59% = Failing

General Notice:

All writing assignments are to be typed with a 10 or 12 point font. If this is a hardship for you, please see me. Please use gender neutral pronouns (i.e. he/she, they) and proper citations. All written work is to be your own original work and may not have been submitted in another class for a grade. Plagiarism violates GaTech's code of conduct and students who plagiarize will be reported to the Dean of Students. If you have any questions whatsoever, read the Honor Code and discuss it with me. It is available at: www.deanofstudents.gatech.edu/Policy/code.in.sections.htm#AHC.

Always use proper citation practices. If you have questions about writing and citation practices, please see me and/or the library's website: http://www.library.gatech.edu/search/citation_guide.php. If it should happen that you need to deviate from the established syllabus in any way for any reason please be respectful of yourself, your classmates and the instructor by attending to the situation in a respectful, honest and professional manner.

Georgia Tech complies with the regulations of the Americans with Disabilities Act of 1990 and offers accommodations to students with disabilities. If you are in need of a classroom accommodation, please make an appointment with the ADAPTS office to discuss the appropriate procedures as soon as possible in order for us to make appropriate modifications to ensure your success in HTS 6XXX. The website for ADAPTS is: <http://adapts.gatech.edu>. Please note that accommodations can only be made for the future.

The instructor reserves the right to alter the syllabus as needed. All changes will be announced in class and on T-Square. It is the student's responsibility to stay informed.