“One of the most effective channels for eradicating poverty, creating wealth and enhancing competitiveness is through the acquisition, adaptation and application of relevant technologies.”
- Secretary-General Ban Ki-moon, 2007

Science and Technology have been pillars of the modern world since most living persons can remember. Modern science is so significant to our existence, and scientific methodology to how we understand the world, that very few people have ever questioned some basic presuppositions about the discipline. Humanity is so confident in Science and Technology that we use them to determine a nation’s value, a person’s status, and institution’s global worth. Historians, sociologist, and scientist have gone around again and again discussing the norms, methods, and practices of science; as well as the role scientific invention has played in the shaping of social structures throughout the world. Science as a concept, a philosophy, a discipline, and an institution is one of the most powerful factors affecting human behavior since the reformation and (as some would say) the fall of centralized religion.

The purpose of this course is to explore the bi-directional relationship between science and technology on the one hand, and women of diverse backgrounds on the other. Among the questions to be discussed are: Does it matter who are the practitioners of science and technology? If it does matter, how and in what ways does it matter? What are the goals and expectations for women in science and engineering? Is attention to gender issues in science and engineering still relevant in 2009? How does science and technology contribute to our understandings and constructions of gender? What are the historical and socio-cultural factors that impact the participation of women and men in science and technology? Our exploration will be based on material from various literatures—sociology, science technology studies, feminism, social studies of science, etc.

Text and Sources:

**Required**

**Recommended**

Other required readings are available online or will be provided prior to the applicable class session
Assignment rubrics and guidelines will be provided via email/in class
Format:

The course will be conducted as a seminar (although there will be brief lectures to establish a common universe of discourse). Participation constitutes an important component of the grade; therefore, students are expected to be prepared to discuss the material assigned for each class meeting. Class attendance is a prerequisite to—not the same thing as—participation.

Requirements:

Students are expected to play three roles each week: participant, creator and researcher.

Participant:

- **Participate fully** in the class through presence, reading, reflection and weekly assignments. Everyone in the class has a role in creating a learning community; thus, you are researchers, decision makers, and creators as you participate in the class. This is described more fully in the following list of requirements. **Students should post 1 critical question for discussion (per reading) via email to T-square no later than 11AM.** Note: If you have to miss a class session due to unavoidable conflict, please take initiative to notify the instructor in advance and make an appointment and discuss the readings and assignments you have missed with the instructor.

Creator:

- **Discussion Leader:** Each student will be responsible for leading the class discussion at least twice during the semester. On the date students sign-up to lead the class discussion they are also responsible for constructing a 1-2 page summary of the reading. Post summaries to T-square by 5PM one day before the reading is scheduled to be discussed.
- **Responder:** Each student will be responsible for being the leading respondent for two class session/topic.
- **Presenter:** Each student will give two presentations on women in science and engineering.
  1. A brief 2-3 minute presentation covering a current issue or story regarding women in science and engineering (i.e. a woman in science and engineering who did not get tenure, the low enrollment of women taking science classes in African schools, etc.). Your presentation should provide a summary of the story, identify significant parties, highlight what is the gender related issue at stake, your propose solution. Students should use the course readings to help shape their presentation and cite relevant sources where necessary. **Deadline June 8, 2009.**
  2. A 5-10 minute presentation introducing the class to your term paper. Your presentation should cover your paper introduction, your thesis, your key points, review of relevant literature, significant facts/statistics, and concluding thoughts and remarks. It is not, however, a full synopsis of your term paper. **Deadline July 6, 2009.**

Researcher:

- **Read all assignments with care,** reflecting on what the author attempts to communicate, what is revealed about women in science and technology, and the arguments of the assigned chapter/excerpt. Highlight key terms, concepts, or examples provided. **Students should post 1 critical question for discussion (per reading) via email to T-square no later than 11AM**
- **Critical Reflection Paper- (5-8 pgs)** Select one of the topics from the course calendar. Write a critical paper incorporating your critique of at least 2 of the assigned readings from that section. Critiques are not the same as summaries. The critique should move beyond summarizing the author’s key points. It should identify the strength and weaknesses of the author’s arguments (supported with examples from the text). Counter arguments should be offered where applicable. Further, a connection between the larger topic and the particular article should be made clear and explicit. **Due June 23, 2009**
• **Term Paper** - Create a 10-15 pg. term paper. Term papers are well-written and well-documented single authored research papers that expand on any aspect of topics addressed throughout the term. The paper should include all elements outlined under “presentation”. In addition, the paper should have original arguments and a well-supported thesis. **Students must provide a prospectus of their term paper to the instructor by June 8.** The prospectus should include a 1-page summary of the proposed topic and an initial annotated bibliography (citing at least 3 primary and 3 secondary sources).

**Final Term Paper is due no later than 4PM on July 30, 2009**

Note: All written assignments should be 12-pt font, double-space, and 1-inch margins. When quoting a source, citations are expected (footnote or endnote). For term papers and critical reflection papers a correctly structured bibliography is expected.

**Grading/Credit:**

50% class participation and attendance
  20%-Class engagement/questions
  10%-Discussion Leader
  20%-Critical Reflection Paper
10% Presentations
40% Term Paper
COURSE CALENDAR (any changes will be communicated via e-mail)

May 11 INTRODUCTION/COURSE OVERVIEW

May 12: ESTABLISHING A COMMON UNIVERSE OF DISCOURSE


May 13: ESTABLISHING A COMMON UNIVERSE OF DISCOURSE (con’t)


May 14: PARTICIPATION IN SCIENCE


Angier, Natalie, “Women Join the Ranks of Science but Remain Invisible at the Top” pp. 75-78.


Harding, Sandra “Women of Third World Descent in the Sciences,” pp. 34-39

May 18

Gender of Science (2002), by Janet A. Kournay

Angier, Natalie, “Women Join the Ranks of Science but Remain Invisible at the Top” pp. 75-78.


Harding, Sandra “Women of Third World Descent in the Sciences,” pp. 34-39

May 19


May 20


May 21: No Class

May 25: Memorial Day (official school holiday)

May 26

The Gender of Science (2002), by Janet A. Kournay


May 27


Sands, Aimee “Never meant to survive”, pp. 31-39.

May 28


June 1: GENDER AND PARADIGMS OF SCIENCE


Keller, Evelyn Fox , “Gender and Science: an update” pp. 245-255.

June 2:


June 3

Women, Science and Technology 2nd (2009), edited by Mary Wyer et al.

June 4: RESEARCH DAY

June 8: PRESENTATIONS ON CURRENT ISSUES: WOMEN IN SCIENCE AND ENGINEERING
Short oral presentation on current issues/story of women in science and engineering
Sign up for individual oral presentations
TERM PAPER PROSPECTUS DUE

June 9: EDUCATION AND SOCIALIZATION


June 15: NOBEL WINNERS, REWARDS, AND PRODUCTIVITY
“Barbara McClintock,” pp. 144-174


June 22: BIOMEDICAL SCIENCES
The Gender of Science (2002), by Janet A. Kourny

June 23 The Gender of Science (2002), by Janet A. Kourny
Critical Reflection Paper Due!

June 24 No Class Research Day
June 25 No Class Research Day


Birke, Lydia, “In pursuit of difference: scientific studies of women and men,” pp. 308-322.
July 1  **The Gender and Science Reader, (2001) edited by Muriel Lederman**
Kaplan, Gisela and Lesley J. Rogers, “Race and Gender Fallacies: the paucity of biological determinist explanations” pp. 323-342.


**July 6** Presentations

**July 7** Presentations

**July 8** Gender, Science, and Reproductive Technology
**The Gender of Science (2002), by Janet A. Kournay, Upper Saddle River, NJ:**
Prentice Hall,
Hubbard, Ruth, “The New Procreative Technologies , pp. 250-266 (read)

**July 9**
Dorothy Roberts, **Killing the black body: race, reproduction, and the meaning of liberty**, Introduction (pp. 3-21) and Chapter 7 (pp.294-312)

**July 13** Gender, Science, Technology and Policy


**July 15** Etzkowitz et al., **Athena Unbound**, pp. 84-103, 137-155

**July 16** Etzkowitz et al, **Athena Unbound**, pp. 180-201, 225-250

**July 20** Current Issues regarding Women in Science and Technology
**Women, Science and Technology 2nd (2009), edited by Mary Wyer et al.**


**July 23** Kim Toffoletti (2007), Cyborgs and Barbie dolls: feminism, popular culture and the posthuman body, pp. 9-30

**July 30:** RESEARCH Paper Due