

HIS 4528-001 (CRN 40281)

Women in Modern Science & Technology
Tues.-Thurs. 11:30-12:45, Tolentine 308

Dr. Jeffrey Johnson
Spring 2005

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AIM OF THE COURSE: This course is designed to examine and analyze issues related to women and gender in modern science and technology. The course will consist of three major, overlapping subject areas, in each of which we will proceed by applying methods of social history, psychohistory, and the history of science and technology, with attention to feminist as well as other perspectives:

1) women and gender in modern (since 1600) scientific theories and research, as well as technological and medical practice (with attention to causes and consequences of differences in the perception of male vs. female bodies, minds, and activities)

2) women in modern scientific professions (professional career obstacles and opportunities, strategies for advancement, development of professional groups, networking, etc.)

3) women as creative scientific workers (analyses and case-studies of similarities and differences in styles and patterns between men and women; special problems confronting women)

MATERIALS: include the following books, plus reserve or on-line/WebCT readings:

Anne Fausto-Sterling, *Myths of Gender: Biological Theories about Women and Men* (2nd ed., 1992)

Londa Schiebinger, *The Mind Has No Sex? Women in the Origins of Modern Science*

Ruth S. Cowan, *More Work for Mother: the Ironies of Household Technology*

Anna N. Bek (Anne D. Rassweiler & Adele Lindenmeyr, eds.), *The Life of a Russian Woman Doctor . . . 1869-1954*

Sharon B. McGrayne, *Nobel Prize Women in Science*

Mary Morse, *Women Changing Science: Voices from a Field in Transition*

WORK AND EVALUATION:

Attendance and discussions (15% of total grade): The class will meet three sessions per week for a combination of informal lectures, discussions of the current readings, and occasional student presentations (see below). Please read each assignment BEFORE coming to the class in which we will discuss it. This is not a class for passive listening; no participation = no discussion grade.

Written work (35%): Students will write a diagnostic essay and two graded short (1-2 page) essays (10% total) and one 5-7 page paper (25%), on topics taken from one of the three major areas of the course, as specified in consultation with the instructor. Guidelines for evaluating papers will be discussed in class.

Oral presentations (10%): Students will also present their longer paper in a short (8-10 minute) oral report at the end of one of the three parts of the course.

Examinations (40%): a mid-term in-class essay (20%) and a final essay examination (20%).

Late work and make-ups: In case you must miss an assignment, notify Dr. Johnson by phone or email (see information above) BEFORE the due date, so that special arrangements can be worked out. If you do not complete an assignment within the first week it is due, and if you do not present an appropriate written excuse (e.g. a serious medical condition), your maximum possible grade must be reduced one letter grade after each week the assignment is overdue.

Academic integrity: The instructor will not tolerate plagiarism and other forms of academic

dishonesty; students handing in work which is demonstrably not their own can expect to be disciplined according to standard university procedures. If you are not certain how to carry out an assignment properly, please consult with the instructor WELL BEFORE the due date.

Learning disabilities: It is Villanova University's policy to make reasonable accommodations for qualified individuals with disabilities. This may include special arrangements for note-taking, taking examinations, etc. If you will need such arrangements, please discuss privately with Dr. Johnson and consult the Office of Learning Support Services in Kennedy Hall (610-519-5636).

OUTLINE AND READING SCHEDULE:

[Note: for convenience, the syllabus will also be posted on Dr. Johnson's website in HTM format, in order to facilitate use of the on-line links listed below]

Week 1 (1/18-20): Introduction & 1st Assignment: read at least 3 selections from <http://www.cnn.com/SPECIALS/2001/americasbest/index.science.html>

In a 1-page essay drawing evidence from any 3 or more of these profiles, answer the question: "does gender matter in contemporary science and medicine?" We will discuss the answers on Thursday.

Thurs.: Discussion. PART 1 ESSAY TOPICS TO BE ANNOUNCED
Part One: Women as subjects and objects in science and technology (6 weeks)

Week 2 (1/25-27) Gender theories in ancient and medieval philosophy and religion

Tues.: Catholic Aristotelianism: dominant views on nature and gender before the Scientific Revolution (Schiebinger, 160-170)

Thurs.: Redefinition of gender in nature and in science (Schiebinger, 119-159, 170-213)

Week 3 (2/1-3) Nature, gender, & evolution in scientific theories, 18th-20th centuries

Tues.: Origins of 19th-century exclusion: the biological basis of "complementary spheres" (Schiebinger, ch. 8 [214-244])

Thurs.: 19th-20th Century gendered views of evolution and disease (Fausto-Sterling, chs. 1 & 6; on-line: Charlotte Perkins Gilman, "The Yellow Wallpaper" (on-line at: <http://www.kino-eye.com/yp/wallpaper.html>); see <http://www.kino-eye.com/yp/whyiwrote.html> for Gilman's "story behind the story") WebCT: Geddes, *Evolution of Sex* (1889), excerpts
PART 2 ESSAY TOPICS TO BE ANNOUNCED

Week 4 (2/8-10) 20th Century theories of gender and the mind

Tues.: Genes and genius (Fausto-Sterling, chs. 2-3)

Thurs.: Gender, mind, and science (Fausto-Sterling, chs. 7-8) [discussion will be completed at the beginning of Week 5 as needed, before the first presentations]
1-2 PAGE ESSAY DUE (topic to be announced)

Week 5 (2/15-17) Tues.-Thurs.: In-class presentations, Part One (to be scheduled)

Week 6 (2/22-24) Review (Tues.) & Midterm In-class essay (Thurs., 2/24)

Part Two: A cycle of women's work in science and technology: From medieval integration to modern exclusion to contemporary re-integration

Week 7 (3/1-3) Women's scientific education & work in medieval and early modern Europe

Tues.: Academics vs. salons; aristocratic women and science (Schiebinger, ch. 1-2)

Thurs.: Women in scientific and medical crafts (Schiebinger, chs. 3-4) PART 1 ESSAY DRAFTS DUE (3/1); PART 3 ESSAY TOPICS TO BE ANNOUNCED

SPRING BREAK (3/7-3/11)

Week 8 (3/15-17) Women in craft & household traditions

Tues.: Early domestic technology (Cowan, ch. 1-2)

Thurs.: Effects of the Industrial Revolution (Cowan, chs. 3-4)

Week 9 (3/22) Professionalization and the problematic role of women

Tues.: Scientific professions as "masculine spheres"? (Schiebinger, chs. 9-10)
ANNOUNCE TOPIC FOR REACTION ESSAY & TIME FOR FILM NEXT WEEK

Thurs.: Easter Holiday

Week 10 (3/29-31) Transforming contemporary scientific professions

Tues.: Origins of modern scientific training and professional organizations for women; comparative perspectives on women's domestic work, U.S. vs. Europe) (Bek, entire; skim Cowan, ch. 6)

FILM: "Angels and Insects" (VR3, Tuesday, 6:30-9 pm)

Thurs.: Feminism and U.S. scientific training & practice (Morse, chs. 1-3)

1-2 PAGE ESSAY DUE (Topic to be announced)

Week 11 (4/5-7) Tues.-Thurs.: In-class Presentations, Part Two (to be scheduled)

Part Three: Women as 20th-century scientists: uncertain careers, recognition, family life

Week 12 (4/12-14) Finding places to do science: cases from the early 20th century

Tues.: Pioneers – Curie, Meitner, Noether (McGrayne, chs. 1-4)

Thurs.: Overcoming scientific and other barriers (McGrayne, chs. 6, 8, 11) PART 2 ESSAY DRAFTS DUE (THURSDAY, 4/14)

Week 13 (4/19-21) Tues.-Thurs.: In-class Presentations, Part Three (to be scheduled)

Week 14 (4/26-28) Nobel winners and others: mid to late 20th century

Tues.: Biochemical, medical, & DNA research (McGrayne, chs. 7, 10 & 13)

Thurs.: The younger generation (McGrayne, chs. 15-16; Morse, ch. 5)

[guest speakers if available] PART 3 ESSAY DRAFTS DUE (TUESDAY, 4/26)

Week 15 (5/3-5) Women and the future of science; review

Tues. [=Friday schedule this week]: NO CLASS

Thurs.: Final discussion & review (Morse, chs. 4, 7-8)

Finals Week (May 7-13) Final will be in Tolentine 308 (our classroom) from 1:30 to 4pm on Tuesday, May 10. Please make your travel plans accordingly, and do not ask Dr. Johnson to shift the day or time of the final examination.