

Teaching Biology as Part of A Women's Studies Program

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About four years ago I was asked by a group of faculty in other areas to help put together a minor in Women's Studies. I agreed to develop a Biology of Women course - BI (WS) 340, which would complement other courses in the minor. The Women's Studies Minor consists of 18 credit hours and the following:

Required Courses:

- *Introduction to Women's Studies
- *Women's Studies Seminar
- *at least 6 credit hours from the following Women's Studies courses:
 - Philosophy of Women
 - Women in American Society
 - Biology of Women
 - Psychology of Women
 - Issues in Women's Studies
- *At least 6 credit hours from the following courses in the Arts & Sciences:
 - Human Genetics
 - Nutrition Through the Lifespan
 - Communication & the Sex Roles
 - Human Development (Psychology Dept.)
 - Human Sexuality (Psychology Dept.)
 - Marriage & Family
 - Aging in American Society
 - Social Problems
 - Ethnic Relations
 - Adult Development

The Biology of Women's course was designed to concentrate on the biology, anatomy, and the normal and abnormal physiology of women throughout her lifespan. Psychological and sociological topics are avoided as much as possible.

The course objectives are:

- to give the student an in-depth understanding of female anatomical structures and physiology.
- to focus attention on women's health care.
- to focus on the role of women in science, allied health fields and medicine.
- to expose the students to scientific language.
- to study the causes and treatments of disorders common to women.
- to discuss the special nutrient needs of women and how they can be met.
- to understand basic cell structure, basic genetics, and cell reproduction.
- to study the biological aspects of human reproduction, including fertility and infertility.

In the first class the students are presented with the fact that most women do not know much about their body, especially how it works and so they are at the mercy of health care givers and readily do what they're told when, in fact, they should take a more active role in any decisions concerning their body. They should ask questions about procedures, etc. . . and alternatives. Perhaps women don't ask questions because they don't know what questions to ask. Thus, one of the goals of this course is to educate women (and men) so that they can be INFORMED patients. Also, in the first class, we talk about the position of women in science, medicine and the health care fields. Are they at the top? Are they Deans? Are they department heads? Are they on state boards of health? Are they on hospital boards? We also talk about the large national health studies concerning cardiovascular

health and the fact that women were and are not included. We also talk about some of the organizations that promote or support women's health care such as the National Women's Health Organization based in Washington.

Several lectures are spent going over anatomical structures that are specific to women such as the pelvic girdle—flare of the ilium, curvature, and tilt, the pelvic inlet, overall bone structure. Also the students study the anatomy of the ovary, uterus, uterine tubes, vulva, vagina, and the mammary glands. Skeletons and models of the organs are used and students are expected to study the models. The students are required to label drawings on tests. Comparisons are also made to comparable male anatomy.

The menstrual cycle and female endocrinology are studied in depth. The action of hormones including feedback systems and receptors are included in this part of the course. Eating disorders (Anorexia Nervosa and Bulimia), Toxic Shock Syndrome, endometriosis, and PMS are also covered.

Another series of lectures are spent covering the basis of biological difference. Students learn in detail the changes that occur in boys and girls during embryonic and fetal development, during puberty and what can go wrong. At this time they also study cell structure, chromosomes, karyotypes, DNA, mutations, mitosis and meiosis.

Students also study the Male vs. Female brain in terms of reported hormonal effects, neurotransmitter and anatomical differences.

The physiology of intercourse is another topic dealt with in the class. At this point we also study sexually transmitted diseases, sexual problems in women, sexual responses in the older woman and in the physically handicapped woman. Sex during pregnancy is also discussed.

The mammary glands are studied extensively through drawings, models and lecture. Changes in breasts are studied relative to pregnancy, milk production, tumors, cancer,

etc. Breast surgery of all types including reduction, augmentation and implants are discussed. Students are taught how to do a breast self-exam and they see a NOVA video on breast cancer in which Dr. Susan Love, a breast cancer surgeon, discusses the pros and cons of radical mastectomies vs. lumpectomies. Then the students learn what a gynecological exam should include and how to do a vaginal self-exam. At this time gynecological difficulties such as vaginitis, yeast infections, bacterial infections, AIDS in women, chlamydia and cervical dysplasia, the PAP test and cervical and uterine cancer are studied.

The next series of lectures are on pregnancy, including fetal development, changes in the woman's body, complications, abortion, weight gain, nutrition, drugs and alcohol, labor and delivery, anesthesia, prepared childbirth, intervention, abuse of Caesareans and breastfeeding.

Fertility and infertility problems, including artificial insemination are explained. Contraception is covered in detail—concentrating on the pill (how it works, side effects, contraindications for its use). Norplant, the IUD, and new contraceptives on the horizon are also covered. Pelvic Inflammatory Disease is discussed at this time. Natural family planning, tubal ligation, RU-486, and abortion are included in this part of the course.

The next lectures deal with menopause—myths, facts, and symptoms. Students read a paper on "Estrogen Therapy" and write a one-page reaction to it. At this point in the course the subjects of osteoporosis, cardiovascular disease and genitourinary problems are dealt with. The students see a short video on women and cardiovascular disease from the local American Heart Society.

Another topic discussed in the course is cosmetics. To understand why cosmetics may or may not be harmful to the body, skin structure is studied in detail. Myths about various skin creams are dispelled. Other topics include: the regulation of what is in cosmetics, the treatment of skin disorders, and hair

structure. Collagen injections are also discussed and a brief video from ABC's 20/20 news show is shown.

The special nutritional needs of women are also studied. Students learn about vitamin supplements, weight gain and the value of exercise in a woman's life. Recent findings relevant to controlling PMS and other disorders through good nutrition are discussed.

The majority of students who take this three-credit course are over 25 and are upper classpersons. Approximately 40% are male. Most of the students are non-science majors such as business, accounting, and information management majors. The next largest group of majors are from psychology and sociology. Most of the students choose to take it because it has upper level credit and "sounds interesting." The male students ask a lot of questions and make interesting comments. The female students enjoy adding personal experiences to amplify subjects being discussed.

In teaching the class I use many models, pass out many drawings, and show relevant videotapes. The students read 3-4 assigned articles on controversial subjects such as estrogen therapy, male vs. female brains, and *in vitro* fertilization and write a one-page reaction to each article. They also write a five-page library research paper on a topic of their choosing or from a list of provided possible topics.

The greatest difficulty in teaching this course is keeping up with changing statistics. The number of women suffering from the various types of cancer or sexually transmitted diseases, changes yearly. For this reason the statistics in the textbook (*Biology of Women* by Ethel Sloane, 1985, John Wiley Press.) are not useful and sometimes confusing for the student. The textbook is excellent except for outdated statistics here and there. I try to keep up on current events relevant to this subject by reading the *Science Newsletter*, *Time*, *Nutrition Action Newsletter*, *Science*, many medical journals passed on to me by a local physician, pamphlets from various societies such as the Osteoporosis Society, American Heart Association, and American

This course has been extremely enjoyable and satisfying to teach. The students learn a tremendous amount of material about the female body—much of it very practical information. Because of its upper credit status it draws non-science students back into the science area beyond what is required as part of the general core. (This course can also be used to satisfy the science core requirement.) The course also provides for good discussions and hopefully dispels many old-wives' tales.

Cancer Society. I also keep up with television specials and news programs on topics discussed in the class.

Another challenge in the course is getting the students to learn the scientific language. They dislike learning medical and anatomical terms but in the end they feel that they are the better for it.

This course is an exciting, thought-provoking, meaningful and very worthwhile contribution to the education of liberal arts students and is recommended highly as an elective in a Biology curriculum.

For additional information:

1. Dreifus, C., ed. 1977. *Seizing Our Bodies: the Politics of Women's Health*. Vintage Books, New York, New York. 321 pp.
2. Fausto-Sterling, A. 1985. *Myths of Gender: Biological Theories About Women and Men*. Basic Books, Inc., New York, New York. 258 pp.
3. Hubbard, R. 1990. *The Politics of Women's Biology*. Rutgers Univ. Press, New Brunswick, New Jersey. 229 pp.
4. Hubbard, R., Henifin, M. S. and Fried, B., eds. 1982. *Biological Woman—the Convenient Myth*. Schenkman Publishing Co., Inc., Rochester, Vermont. 376 pp.
5. White, E. C. 1990. *The Black Women's Health Book*. Seal Press, Seattle, Washington. 299 pp.

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