

**552. Veterinary Integrative Problem Solving V**

*Fall. 3(2-3) P: Completion of semester 4 of the graduate-professional program in the College of Veterinary Medicine.*

Integration of subject material from concurrent and previous semester courses.

**553. Theriogenology and Urinary Diseases**

*Fall. 5(4-2) P: Completion of semester 4 of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in VM 560 or VM 580.*

Urogenital diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

**554. Hematological, Oncological and Dermatological Diseases**

*Fall. 3(3-0) P: Completion of semester 4 of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in VM 562 or VM 568.*

Hematological, oncological and dermatological diseases of domestic animals. Pathogenesis, clinical presentation, diagnosis and treatment.

**555. Neurological and Ophthalmological Diseases**

*Fall. 3(3-0) P: Completion of semester 4 of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in VM 563 or VM 566.*

Neurological and ophthalmological diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

**556. Digestive, Metabolic and Endocrinological Diseases**

*Fall. 5(5-0) P: Completion of semester 4 of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in VM 540 or VM 576 or VM 586.*

Digestive, metabolic, and endocrinological diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

**557. Operative Surgery**

*Fall. 2(1-3) P: Completion of semester 4 of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in VM 578 or VM 588 or VM 596.*

Soft tissue and orthopedic surgery of domestic animals: preoperative evaluation, surgery, and postoperative care.

**611. Veterinary Externship**

*Fall, Spring, Summer. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Completion of 5 semesters of the graduate-professional program in the College of Veterinary Medicine.*

Clinical or research experience in an off-campus setting.

**690. Special Problems in Veterinary Medicine**

*Fall, Spring. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate-professional students in the College of Veterinary Medicine.*

Individual study directed by a faculty member on an experimental, theoretical, or applied problem. May involve off campus experience in a preceptorial mode.

**818. The Epidemiology of Zoonotic Diseases**

*Spring of odd years. 3(3-0) Interdepartmental with Epidemiology. Administered by Epidemiology. P: EPI 810. R: Open only to master's students in the Epidemiology major or approval of department.*

Human susceptibility to diseases of animals. Modes of transmission, surveillance, and strategies for prevention of specific zoonotic diseases.

SA: HM 818

**WOMEN'S STUDIES WS**

**Women's Studies Program  
College of Arts and Letters  
College of Social Science**

**201. Introduction to Women's Studies**

*Fall, Spring, Summer. 4(4-0)*

Diversity of women's situations in social, cultural, historical and international contexts. Focus on women as victims of oppression and as agents. Concepts basic to feminist thought: gender systems, patriarchy.

**202. Introduction to Contemporary Feminist Theories**

*Fall. 3(3-0) P: (WS 201) Or approval of program. R: Not open to freshmen.*

Contemporary feminist theories of patriarchy, oppression, liberation, sexuality, and the meaning of "woman." Influences of liberalism, Marxism, Freud. Intersections of sex, race, class, and ethnicity. Theories by women of color.

**203. Bibliographic Methods for Women's Studies Research**

*Fall of odd years. 3(3-0) P: Completion of Tier I writing requirement.*

Women's studies as interdisciplinary knowledge. Bibliographic and reference sources. Library organization of information. Research problems.

**204. Lesbian, Bisexual, and Gay Studies: Psychological and Cultural Issues**

*Spring of odd years. 3(3-0) Interdepartmental with Psychology.*

Nature, origins, and development of sexual orientation and sexual identity in the context of personality, culture, and society. Multicultural and feminist perspectives on the relationship between sexual orientation and gender, race, class, ethnicity, and religion.

**211. Introduction to Gender and Environmental Issues**

*Spring. 3(3-0) Interdepartmental with Fisheries and Wildlife; Forestry; Public Resource Management; Resource Development. Administered by Fisheries and Wildlife. R: Not open to freshmen.*

The concept of gender. Overview of environment and habitat. Historical gender roles in environmental management. Gender-based theoretical perspectives. Case studies on developing and developed countries. Environmental management with emphasis on fisheries, wildlife and wetlands. Women environmental professionals.

**225. Women and Language**

*Fall. 3(3-0) Interdepartmental with Linguistics. Administered by Linguistics.*

Women and language in societies around the world. Issues such as status and verbal politeness, importance of names, gender differences in language use, women's multilingualism, sexist language, gendered language development in children.

**301. Sexual Violence Against Women and Children: Theory and Response**

*Spring. 3(3-0) P: (WS 201 Or WS 202 Or WS 203) R: Not open to freshmen.*

Sexual violence against women and children from theoretical and applied perspectives. Rape, battering, incest and sexual harassment. Intersection of race, class, gender and violence. Individual and collective strategies to prevent or deter assault, race, class, gender and violence.

**302. Jewish Women's Experiences and Writings**

*Fall of even years. 3(3-0) P: (WS 201 Or WS 202 Or WS 203) R: Not open to freshmen.*

Diverse experiences of Jewish women from a multidisciplinary perspective. Gender construction of Jewish and majority women and men. Generations of immigrant Jewish women. Anti-Semitism. Jewish feminism. Political and economic issues.

**321. Lesbian Cultures and Identities**

*Fall of even years. 3(3-0) P: (WS 201) RB: (WS 202)*

Lesbian history, lesbian cultures/communities, and the construction of lesbian identity.

**322. Lesbian Literature, Arts and Popular Culture**

*Fall of odd years. 3(3-0) P: (WS 201) RB: (WS 202)*

Lesbian writers and artists as contributors to popular and high culture.

**400. Women in Classical Greek Society**

*Spring of odd years. 3(3-0) Interdepartmental with Classical Studies. Administered by Classical Studies. R: Not open to freshmen and sophomores.*

Image, role, and status of women in Greek society as seen through literary sources.

**401. Feminist Theory**

*Spring. 4(4-0) P: (WS 201 and WS 202) R: Not open to freshmen or sophomores.*

Integrative and multidisciplinary approaches to theory in women's studies. Conceptualization of sex and gender and the subordination of women. Feminist critique of theories of knowledge. Comparison of evolving feminist theories.

**403. Women and Change in Developing Countries**

*Spring. 3(3-0) P: (WS 201 Or WS 202 Or WS 203) R: Not open to freshmen or sophomores.*

Effects of economic, political, and social change on women in developing countries. Interrelationships of gender, class, race, and nationality.

**Descriptions—Women's Studies  
of  
Courses**

**404. Women and the Law in the United States**

*Fall of odd years. Spring of odd years. 3(3-0) P: (WS 201 Or WS 202 Or WS 203) R: Not open to freshmen or sophomores.*

Law in the United States as a vehicle for structuring and maintaining women's social roles, and for social change.

**405. Feminist Analyses of Education in the United States**

*Fall of odd years. 3(3-0) Interdepartmental with Teacher Education. P: (WS 201 Or WS 202 Or WS 203) R: Not open to freshmen or sophomores.*

Feminist perspectives on the role of gender in structuring educational experiences in elementary and secondary school.

**413. Families in Historical Perspective**

*Fall. 3(3-0) Interdepartmental with History. Administered by History. R: Not open to freshmen.*

Family forms and socio-economic change in Europe and the United States. Gender, childhood, courtship, sexual relations, marriage, divorce, childbearing, and old age in peasant, industrial, and postindustrial society. War, welfare state, and the family. The marginalized: vagrants, foundlings, immigrants, and single mothers.

**420. History of Sexuality since the 18th Century**

*Fall, Spring. 3(3-0) Interdepartmental with History. Administered by History. R: Not open to freshmen*

Changing gender roles, sex in the Victorian era, prostitution, pornography, birth control, emergence of homo- and heterosexuality, sex under fascism, the sexual revolution, contemporary conflicts.

**425. Women and Criminal Justice**

*Spring of even years. 3(3-0) Interdepartmental with Criminal Justice. Administered by Criminal Justice. P: (CJ 220 Or WS 201) R: Open only to juniors or seniors.*

Theories on women's victimization and criminality. Women's experiences as victims, offenders, and criminal justice employees. Laws and their effects on the rights of women in the criminal justice system.

**453. Women and Work: Issues and Policy Analysis**

*Spring. 3(3-0) Interdepartmental with Public Resource Management; and Economics. Administered by Public Resource Management. P: EC 201 or EC 202 or PRM 201 or concurrently. R: Not open to freshmen and sophomores.*

Current and past quantity and quality of women's participation in the labor force. Gender differentials in earnings, and occupations. Employment discrimination. Laws, especially affirmative action laws. Social policy effects. International issues.

**482. Theory and Practice of Feminist Literary Criticism**

*Spring. 3(3-0) Interdepartmental with English. Administered by English. P: (ENG 353 or ENG 379 or WS 202) and completion of Tier I writing requirement. R: Open only to juniors or seniors in the Department of English or Women's Studies Program or English disciplinary minor.*

Feminist literary critical theory and its implications for reading and studying literature.

**490. Independent Study**

*Fall, Spring. 1 to 3 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P: (WS 201 or WS 202 or WS 203) R: Open only to juniors or seniors; approval of program.*

Individual reading and research on women and gender.

**491. Special Topics**

*Fall, Spring. 3 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P: (WS 201 Or WS 202 Or WS 203) R: Not open to freshmen or sophomores.*

In-depth study of special topic emphasizing women and gender.

**492. Women's Studies Senior Seminar (W)**

*Spring. 4(4-0) P: (WS 201 and WS 203) and completion of Tier I writing requirement. R: Not open to freshmen or sophomores.*

Synthesis and elaboration of ideas and perspectives central to women's studies. Current areas of interest and research in feminist scholarship.

**493. Internship**

*Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. P: (WS 201 or WS 202 or WS 203) R: Not open to freshmen or sophomores.*

Approval of program. Integration of feminist knowledge through work experience related to women's concerns. Experience in legislative, community, or educational settings.

**890. Individual Reading**

*Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Approval of program.*

Faculty supervised graduate level reading in special topics.

**ZOOLOGY**

**ZOL**

**Department of Zoology  
College of Natural Science**

**111L. Cell and Molecular Biology Laboratory**

*Fall, Spring, Summer. 2(1-3) Interdepartmental with Biological Science; Microbiology; and Botany and Plant Pathology. Administered by Biological Science. P: BS 111 or concurrently*

Principles and applications of common techniques used in cell and molecular biology.

**141. Introductory Human Genetics**

*Spring. 3(3-0) R: Not open to students in the Biochemistry or Botany and Plant Pathology or Entomology or Medical Technology or Clinical Laboratory Sciences or Physiology or Zoology or Microbiology or Biological Science-Interdepartmental major or to students in the corresponding Lyman Briggs School coordinate majors or to students in the Lyman Briggs School Biology field of concentration. Not open to students with credit in ZOL 341 or ZOL 344.*

Inheritance of human traits. Impact of genetic technology on society. Ethical and legal issues. Risks and benefits of genetic technology.

**306. Invertebrate Biology**

*Fall. 4(3-3) P: (BS 110 or LBS 144 or LBS 148H)* Systematics, morphology, and natural history of invertebrate animals. Identification of live and preserved specimens. Recognition of selected groups.

**309. Laboratory in Behavioral Neuroscience**

*Fall. 4(2-4) Interdepartmental with Psychology. Administered by Psychology. P: (PSY 209 or ZOL 402) and (PSY 295 or concurrently or STT 201)*

Theory and laboratory experience in the study of behavioral neuroscience. Focus on relationship among hormones, brain, and behavior.

**313. Animal Behavior**

*Fall, Spring. 3(3-0) P: (BS 110 or LBS 144 or LBS 148H) R: Not open to freshmen.*

Development, physiological mediation, adaptive significance and evolution of behavior. SA: ZOL 213

**316. General Parasitology**

*Spring. 3(3-0) P: (BS 110 or LBS 144 or LBS 148H)*

Identification, life history, host-parasite relationships, and epidemiology of protozoan, helminth, acanthocephalan, copepod, and arthropod parasites of animals and humans.

**316L. General Parasitology Laboratory**

*Spring. 1(0-2) P: (ZOL 316 or concurrently) R: Not Open to freshman*

Laboratory diagnosis of protozoans, helminths, acanthocephalans, copepods, and arthropods that infect humans and animals. Animal necropsy.

**319. Introduction to Earth System Science**

*Fall. 3(3-0) Interdepartmental with Entomology; Botany and Plant Pathology; Geological Sciences; and Sociology. Administered by Entomology. P: Completion of one course in biological or physical science.*

Systems approach to Earth as an integration of geochemical, geophysical, biological and social components. Global dynamics at a variety of spatio-temporal scales. Sustainability of the Earth system.

**320. Developmental Biology**

*Fall. 4(3-3) P: (BS 110 or LBS 144 or LBS 148H) and (BS 111 or LBS 145 or LBS 149H)*

Principles of development, emphasizing vertebrates. Illustrations from morphological and experimental investigations. SA: ZOL 220

**328. Comparative Anatomy and Biology of Vertebrates**

*Spring. 4(3-3) P: (BS 110 or LBS 144 or LBS 148H) and completion of Tier I writing requirement.*

Comparative morphology and natural history of vertebrates. Dissection of representatives of most vertebrate classes. SA: ZOL 228

**341. Fundamental Genetics**

*Fall, Spring, Summer. 4(4-0) Interdepartmental with Botany and Plant Pathology. P: (BS 111 or LBS 145 or LBS 149H)*

Principles of heredity in animals, plants and microorganisms. Classical and molecular methods in the study of gene structure, transmission, expression and evolution.