

**Descriptions — Veterinary Medicine
of
Courses**

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-numbered years. 3(3-0) Interdepartmental with Human Medicine. Administered by Human Medicine.
P: HM 810. R: Open only to master's students in Epidemiology or approval of college. Human susceptibility to diseases of animals. Modes of transmission, surveillance, and strategies for prevention of specific zoonotic diseases.

211. Introduction to Gender and Environmental Issues
Spring. 3(3-0) Interdepartmental with Fisheries and Wildlife, Resource Development, Forestry, and Public Resource Management. 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.

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-numbered 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.

400. Women in Classical Greek Society
Spring of odd-numbered years. 3 credits. 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, WS 202. R: Not open to freshmen and 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; WS 202 or WS 203. R: Not open to freshmen and sophomores.
Effects of economic, political, and social change on women in developing countries. Interrelationships of gender, class, race, and nationality.

404. Women and the Law in the United States
Fall of odd-numbered years, Spring of odd-numbered 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-numbered 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 credits. Interdepartmental with History. Administered by History.
R: Not open to freshmen.
Family forms and socio-economic change in Europe and 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. Themarginalized: vagrants, foundlings, immigrants, and single mother

420. History of Sexuality since the 18th Century
Fall, Spring. 3 credits. 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-numbered years. 3(3-0) Interdepartmental with Criminal Justice. Administered by Criminal Justice.
P: CJ 220 or WS 201. R: Open only to juniors in Criminal Justice and Women's Studies.
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 credits. Interdepartmental with English. Administered by English.
P: ENG 353 or WS 202. R: Not open to freshmen and sophomores except with approval of department. Open only to majors in English and in Women's Studies, and to juniors and seniors with a teaching minor in English. Completion of Tier I writing requirement.
Feminist literary critical theory and its implications for reading and studying literature.

490. Independent Study
Fall, Spring. 1 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: 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.

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-numbered 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-numbered 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.

492. Women's Studies Senior Seminar (W)
Spring. 4(4-0)
P: WS 201, WS 203; WS 301 or WS 302. R: Not open to freshmen and sophomores. Completion of Tier I writing requirement.
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 credits. 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 Biochemistry, Botany, Entomology, Medical Technology, Clinical Laboratory Sciences, Physiology, Zoology, Microbiology or Interdepartmental Biological Science 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.
Systematics, morphology, and natural history of invertebrate animals. Identification of live and preserved specimens. Recognition of selected groups.

313. Animal Behavior
Fall. 3(3-0)
P: BS 110, BS 111 or LBS 144, LBS 145. R: Not open to freshmen.
Mechanisms and evolution of behavior (ethology).
SA: ZOL 213

316. General Parasitology
Spring. 3(3-0)
P: BS 110, BS 111 or LBS 145.
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 credit.
P: BS 110, BS 111 or LBS 145. C: ZOL 316 concurrently.
Laboratory diagnosis of protozoans, helminths, acanthocephalans, copepods, and arthropods that infect humans and animals. Animal necropsy.

319. Introduction to Earth System Science
Fall. 3 credits. 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, BS 111 or LBS 144, LBS 145.
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. R: Completion of Tier I writing requirement.
Comparative morphology and natural history of vertebrates. Dissection of representatives of most vertebrate classes.
SA: ZOL 228

331. Vertebrate Life of the Past
Spring. 3(3-0) Interdepartmental with Geological Sciences. Administered by Geological Sciences.
P: BS 110 or BS 111 or juniors and above. R: Not open Zoology majors. Not open to students with credit in GLG 433.
Evolution and diversity of fossil vertebrates from fish to humans with emphasis on dinosaurs and Pleistocene events.

341. Fundamental Genetics
Fall, Spring, Summer. 4(4-0) Interdepartmental with Botany and Plant Pathology.
P: BS 111 or LBS 145.
Principles of heredity in animals, plants and microorganisms. Formal and molecular methods in the study of gene structure, transmission, expression and evolution.

342. Advanced Genetics
Spring. 3(3-0)
P: ZOL 341. R: Completion of Tier I writing requirement.
Advanced topics in classical and molecular genetics including various forms of genetic mapping.

343. Genetics Laboratory
Spring. 2 credits.
P: ZOL 341 or concurrently. R: Completion of Tier I writing requirement.
Experiments involving genetics of *Drosophila* and other eucaryotic organisms.

344. Human Genetics
Spring. 3(3-0)
P: ZOL 341. R: Not open to freshmen.
Inheritance of human traits. Medical, physiological and forensic applications. Biochemical and molecular genetics of human disease. Chromosomal disorders and their consequences. Prenatal and pre-symptomatic diagnosis. Legal and ethical considerations.

350. Histology
Fall. 4(3-3)
P: BS 111 or LBS 145.
The structure of cells and their interactions to form tissues.

353. Marine Biology
Fall of even-numbered years. 4(4-0)
P: BS 110; BOT 250 or ZOL 250 or ZOL 306.
Analysis of marine and estuarine systems. Integration of biology, chemistry, and physics. Life histories of marine organisms. Biology of special marine habitats. Physiological problems of marine life.

355. Ecology
Fall. 3(3-0) Summer. 3 credits. Given only at W.K. Kellogg Biological Station. Interdepartmental with Botany and Plant Pathology.
P: BS 110 or LBS 144. R: Completion of Tier I writing requirement.
Plant and animal ecology. Interrelationships of plants and animals with the environment. Principles of population, community, and ecosystem ecology. Application of ecological principles to global sustainability.
SA: ZOL 250

355L. Ecology Laboratory
Fall. 1 credit. Summer. 1 credit. Given only at W.K. Kellogg Biological Station. Interdepartmental with Botany and Plant Pathology.
P: ZOL 355 or concurrently. R: Completion of Tier I writing requirement.
Population, community and ecosystem ecology utilizing plant and animal examples to demonstrate general field principles.

360. Biology of Birds
Spring. 4(3-3) Summer. 4 credits. Given only at W.K. Kellogg Biological Station.
P: BS 110 or LBS 144.
The behavior, ecology, evolution, and systematics of birds with emphasis on biodiversity. Laboratories emphasize diversity of form and function, life history patterns, and identification.

361. Michigan Birds
Summer. 4 credits. Given only at W.K. Kellogg Biological Station.
P: BS 110 or LBS 144 R: Not open to students with credit in ZOL 384 or ZOL 360.
Field study of avian diversity, ecology, and behavior using current systematics and habitat identification techniques.

365. Biology of Mammals
Fall. 4(3-3)
P: BS 110 or LBS 144
Analysis of the behavior, ecology, evolution, and systematics of mammals. Laboratories emphasize diversity of form and function, life history patterns, and identification. Field trips required.

366. Biology of Great Lakes Mammals
Summer. 4 credits. Given only at W.K. Kellogg Biological Station.
P: BS 110 or LBS 144
Diversity, ecology, and behavior of mammals. Laboratory and field studies emphasizing systematics, life-history and field techniques.

369. Introduction to Zoo and Aquarium Science
Spring. 3(3-0) Interdepartmental with Landscape Architecture, Fisheries and Wildlife, and Veterinary Medicine.
P: BS 110.
Fundamentals of zoo and aquarium operations including research, interpretation, design, nutrition, captive breeding, conservation, ethics and management.