Courses in Animal Biology (ABG)

Graduate

200A. Integrated Animal Biology I (3)
Lecture/discussion—3 hours. Prerequisite: graduate standing; Biological Sciences 101 or the equivalent or the consent of the instructor. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students.—I. (I.) Def Peters

200B. Integrated Animal Biology II (3)
Lecture/discussion—3 hours. Prerequisite: course 200A. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students.—II. (II.) Conley, Murray

202. Grant Procurement and Administration (2)
Lecture—1 hour; discussion/laboratory—1 hour. Prerequisite: course 200B. Pass I restricted to Animal Biology Graduate Group students. Topics include: structure of grants, attention to specifications, concise persuasive writing, and grant budgeting. Identify grant opportunities, write a persuasive research grant proposal, and administer grants. Limited enrollment.—I. (I.)

250. Mathematical Modeling in Biological Systems (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing; Mathematics 16A, 16B, or equivalents required; Mathematics 16C or equivalent recommended; Statistics 100 or equivalent required; more than one course in statistics recommended; Animal Biology 102 or Biological Sciences 102 recommended or equivalent course in biochemistry. Limited enrollment. Model development and evaluation including sensitivity analyses using R. Four principle modeling methodologies included: algebraic functional of biological processes, physiological-based compartmental models, linear programming and meta-analysis. Fundamental background and understanding of mathematical modeling principles in biological systems.—II. (II.) Fadel, Kreeb

255. Physiology of the Stress Response (2)
Lecture/discussion—2 hours. Prerequisite: graduate student; Definition of Stress; Physiological mechanisms of adaptation to stress; Hormonal control of the systemic stress response; Mechanisms of the cellular stress response; Discussion of current trends in stress physiology and current methods for studying the stress response. (Same course as Molecular, Cellular, and Integrative Physiology 255.)—III. (III.) Kueltz

290. Seminar in Animal Biology (1)
Seminar—1 hour. Prerequisite: graduate standing. Seminar on advanced topics in animal biology. Presentations by members of the Animal Biology Graduate Group and guest speakers. May be repeated for credit.—I, II, III

290C. Research Conference (1)
Discussion—1 hour. Prerequisite: graduate standing and consent of instructor. Student presentations of research in Animal Biology and discussions among participating students and Animal Biology faculty. May be repeated for credit. (S/U grading only.)—I, II, III, IV

298 Group Study in Animal Biology (1-5)
Prerequisite: graduate standing.

299. Research (1-11)
Prerequisite: graduate standing and consent of instructor. Research with a faculty member in Animal Biology Graduate Group. May be repeated for credit. (S/U grading only.)—I, II, III, IV, (I, II, III, IV)

Professional

300. Methods in Teaching Animal Biology (2)
Lecture/discussion—2 hours. Prerequisite: graduate standing and consent of instructor. Practical experience in the methods and problems of teaching animal biology. Includes analysis of laboratory exercises, discussion of teaching techniques, grading scientific essays, preparing for and conducting discussion or laboratory sections, formulating quiz and exam questions under instructor supervision. May be repeated up to three times for credit. (S/U grading only.)—I, II, (I, II) Famula, Oberbauer

396. Teaching Assistant Training Practicum (1-4)
Variable—3-12 hours. Prerequisite: graduate standing and consent of instructor. May be repeated for credit. (S/U grading only.)—I, II, III, (I, II, III)

Animal Genetics

[College of Agricultural and Environmental Sciences]

Faculty. See under Department of Animal Science, on page 153.

Major Program. See the major in Animal Science, on page 153.

Related Courses. See Biological Sciences 101, 101D; Evolution and Ecology 102, 175; Genetics Graduate Course; Microbiology 150, 170, 215, 260, 274, 292; Molecular and Cellular Biology 121, 141, 163, 178, 182, 221C, 257, 262, 263; Neurobiology, Physiology, and Behavior 131; Plant Biology 151, 152, 154, 161A, 161B, Plant Pathology 215X, 217; Plant Sciences 220, 221.

Courses in Animal Genetics (ANG)

Questions pertaining to the following courses should be directed to the instructor or to the Animal Science Advising Center in 1202 Meyer Hall 530-754-7915.

Upper Division

101. Animal Cytogenetics (3)
Lecture/laboratory—1 hour; laboratory—6 hours. Prerequisite: Biological Sciences 101, 102 or the equivalent. Principles and techniques of cytogenetics applied to animal systems; chromosome harvest techniques, analysis of mitosis and meiosis, karyotyping, chromosome banding, cytogenetic mapping, chromosome structure and function, comparative cytogenetics. GE credit; SciEng | SE

105. Horse Genetics (2)
Lecture—2 hours. Prerequisite: course 15 and Biological Sciences 101. Coat color, parentage testing, medical genetics, disease traits, breed-specific genes, and the geneplex and genotypic Equus. Emphasis on understanding horse genetics based on the unity of mammalian genetics and making breeding decisions based on fundamental genetic concepts. GE credit; SciEng | SE, SL—III, (III) Famula

107. Genetics and Animal Breeding (5)
Lecture—4 hours; laboratory—3 hours. Prerequisite: Biological Sciences 101. Principles of quantitative genetics applied to improvement of livestock and poultry. Effects of mating systems and selection methods are emphasized with illustration from current breeding practices. GE credit; SciEng | SE—II, (II) Medrano

111. Molecular Biology Laboratory Techniques (4)
Lecture—2 hours; laboratory—6 hours. Prerequisite: Biological Sciences 1C, 101, 102, 103. Introduction to the concepts and techniques used in molecular biology; the role of this technology in both basic and applied animal research, and participation in laboratories using some of the most common techniques in molecular biology. GE credit; SciEng | SE, SL—II, (II) Kueltz, Murray

198. Directed Group Study (1-5)
Prerequisite: consent of instructor. Selected topics relating to animal genetics. (P/NP grading only.)

199. Special Study for Advanced Undergraduates (1-5)
Prerequisite: consent of instructor. (P/NP grading only.)