

**142. Companion Animal Care and Management (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 42, Biological Sciences 101, Neurobiology, Physiology, and Behavior 101; Animal Biology 102 and 103 recommended. Management and production of companion animals. Integration of the disciplinary principles of behavior, genetics, nutrition, and physiology as related to the care of companion animals.—I. (I.) Oberbauer

**143. Pig and Poultry Care and Management (4)**

Lecture—3 hours; laboratory—3 hours; Saturday field trips. Prerequisite: Nutrition 115, Neurobiology, Physiology, and Behavior 101. Care and management of swine, broilers and turkeys as related to environmental physiology, nutrition and metabolism, disease management and reproduction. Offered in alternate years.—(I.) King

**144. Beef Cattle and Sheep Production (4)**

Lecture—3 hours; laboratory—3 hours; one or two Saturday field trips. Prerequisite: course 41, Animal Genetics 107, Nutrition 115, or consent of instructor; a course in Range Science and a course in microcomputing are recommended. Genetics, physiology, nutrition, economics and business in beef cattle and sheep production. Resources used, species differences, range and feedlot operations. Emphasis on integration and information needed in methods for management of livestock enterprises.—III. (III.) Sainz

**145. Meat Processing and Marketing (4)**

Lecture—3 hours; laboratory—3 hours. Prerequisite: course 143 or 144 or consent of instructor. Distribution, processing and marketing of meat and meat products. Meat and meat animal grading and pricing. Government regulations and social/consumer concerns. Future trends and impact on production management practices. Includes poultry.—II. (II.) Lee

**146. Dairy Cattle Production (4)**

Lecture—3 hours; laboratory—3 hours; one mandatory Saturday field trip. Prerequisite: course 124, Animal Genetics 107, and Nutrition 115, or consent of instructor. Scientific principles from genetics, nutrition, physiology, and related fields applied to conversion of animal feed to human food through dairy animals. Management and economic decisions are related to animal biology considering the environment and animal well-being. GE credit: SciEng, Wrt.—III. (III.) DePeters

**147. Dairy Processing and Marketing (3)**

Lecture—2 hours; laboratory—3 hours. Prerequisite: course 146 or consent of instructor. Examination of distribution systems, processing practices, product quality, impact of government policy (domestic and foreign), marketing alternatives, and product development.—II. (II.)

**148. Enterprise Analysis in Animal Industries (4)**

Lecture/discussion—4 hours. Prerequisite: course 141 or 145 or 147 or consent of instructor. Examination and application of decision making and problem solving in the production enterprise. The areas of production analysis, problem solving, risk analysis and cost-benefit analysis will be examined in terms of the total enterprise. GE credit: SocSci, Wrt.—III. (III.)

**149. Farrier Science (3)**

Lecture—3 hours. Prerequisite: course 115. Distance learning class broadcast from California Polytechnic State University San Luis Obispo, California Polytechnic State University Pomona, and California State University Fresno. In-depth examination of the structure-function relationship of the equine hoof and how it relates to conformation, injury, and performance.—III. (III.)

**149L. Farrier Science Laboratory (1)**

Laboratory—3 hours. Prerequisite: course 149 (may be taken concurrently) or consent of instructor. The art and science of horseshoeing in equine related fields. Proper use of the tools, materials and tech-

niques in the fabrication of shoes and safe preparation of the hoof for application of shoes. (P/NP grading only.)—III. (III.)

**170. Ethics of Animal Use (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: any basic course in composition or speech. Ethical issues relating to animal use in contemporary society. Integration of philosophical theories with scientific evidence relating to animal behavior, mentality, and welfare. Uses of animals in agriculture, research, and as companions. Ethical responsibilities regarding wildlife and the environment. (Same course as Veterinary Medicine 170.) GE credit: SocSci, Wrt.—III. (III.) Tannenbaum

**190C. Research Group Conference (1)**

Discussion—1 hour. Prerequisite: advanced standing; consent of instructor. Weekly conference on research problems, progress and techniques in the animal sciences. May be repeated for credit. (P/NP grading only.)—I, II, III. (I, II, III.)

**192. Internship in Animal Science (1-12)**

Internship—3-36 hours. Prerequisite: completion of 84 units and consent of instructor. Internship off and on campus in dairy, livestock and aquaculture production, research and management; or in a business, industry, or agency associated with these or other animal enterprises. All requirements of Internship Approval Form must be met. (P/NP grading only.)—I, II, III. (I, II, III.)

**194. Research in Animal Science (3)**

Laboratory—6 hours; discussion—1 hour. Prerequisite: upper division standing, course 193, one laboratory course in animal biology and consent of instructor. Research with a faculty mentor. Weekly discussion and laboratory on specific research topic. May include a seminar to research group. Choose from sections: (1) Animal Behavior; (2) Animal Genetics; (3) Animal Nutrition; (4) Animal Physiology. May be repeated for credit for a total of four times.—I, II, III. (I, II, III.)

**194HA-194HB-194HC. Undergraduate Honors Thesis in Animal Science (4-4-4)**

Lecture—1 hour; laboratory—9 hours. Prerequisite: Neurobiology, Physiology, and Behavior 101, Animal Biology 103; minimum cumulative GPA of 3.200 and selection by the Honors Selection Committee. Students will carry out a research project (chosen from faculty-suggested or approved proposals) during the academic year under the guidance of a faculty member. Upon completion, student will write a thesis and present a public seminar describing his/her research. (Deferred grading only, pending completion of sequence.)

**197T. Tutoring in Animal Science (1-2)**

Tutorial—1-2 hours. Prerequisite: Animal Science or related major, advanced standing, consent of instructor. Tutoring of students in lower division animal science courses; weekly conference with instructors in charge of courses; written critiques of teaching procedures. May be repeated once for credit. (P/NP grading only.)

**198. Directed Group Study (1-5)**

Prerequisite: consent of instructor. (P/NP grading only.)

**199. Special Study for Advanced Undergraduates (1-5)**

Prerequisite: consent of instructor. (P/NP grading only.)

**Graduate Courses****200. Strategies in Animal Production (4)**

Lecture/discussion—4 hours. Prerequisite: consent of instructor. Examines the forces and issues in animal agriculture through the strategic management process.—(I.)

**206. Models in Agriculture and Nutrition (3)**

Lecture—2 hours; laboratory—3 hours. Prerequisite: Mathematics 16B; Statistics 108. Basic model building principles and techniques for statistical and systems simulation models. Optimization techniques for non-linear experimental designs and management models are presented. Quantitative analysis and

evaluation of linear and non-linear equations used in agriculture and nutrition. Offered in alternate years.—Fadel

**259. Literature in Animal Science (1)**

Seminar—1 hour. Prerequisite: graduate standing. Critical presentation and analysis of recent journal articles in animal science. May be repeated for credit up to nine times. (S/U grading only.)—I, II, III. (I, II, III.)

**290. Seminar (1)**

Seminar—1 hour. Reports and discussions of topics of interest in genetics, nutrition, and physiology as they apply to animal science. (S/U grading only.)—I, II, III. (I, II, III.)

**290C. Research Group Conference (1)**

Discussion—1 hour. Prerequisite: graduate standing. Weekly conference on research problems, progress and techniques in the animal sciences. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)

**291. Current Research in Animal Science (1)**

Seminar—1 hour. Prerequisite: graduate standing. Current research in animal science explored at weekly seminars presented by guest lecturers. Discussion of research presented. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)

**297. Supervised Teaching in Animal Science (2)**

Supervised teaching—6 hours. Prerequisite: consent of instructor. Practical experience in teaching Animal Science at the University level; curriculum design and evaluation; preparation and presentation of material. Assistance in laboratories, discussion sections, and evaluation of student work. An evaluation letter sent to the Graduate Adviser with a copy to the student. (S/U grading only.)—I, II, III. (I, II, III.)

**298. Group Study (1-5)**

Prerequisite: consent of instructor. (Sect. 1, 2, 3—letter grading; from Sect. 4 on—S/U grading only.)

**299. Research (1-12)**

(S/U grading only.)

## Animal Science and Management

(College of Agricultural and Environmental Sciences)

### The Major Program

The Animal Science and Management major combines a thorough education in the basic biology of domestic animal species with a strong background in agricultural economics. Graduates of this interdisciplinary major will be well positioned to adjust to our rapidly changing world and job market.

**The Program.** The interdisciplinary program in Animal Science and Management combines a fundamental background in the natural sciences (chemistry, biology, physiology, nutrition, genetics, mathematics, and behavior), with an understanding of economics and humanities. After completing preparatory courses, students focus on both the animal species that interest them (horses, cattle, sheep, companion animals, goats, fish, crustaceans or mollusks, among others) and principles of managerial economics (marketing, finance, business organization or systems analysis). Students preparing for medical or veterinary school can meet professional entrance requirements with those of this major if they plan ahead.

**Career Alternatives.** Job opportunities for successful graduates are plentiful and include positions with banking and financial institutions, agribusiness, Peace Corps, and farms of all scales. Most Animal Science and Management graduates are well prepared for professional study (medical, law, veterinary, and graduate business schools) as well as graduate research programs leading to the M.S. or Ph.D. degrees. Advanced degrees open doors to work as extension specialists, farm advisers, and

Quarter Offered: I=Fall, II=Winter, III=Spring, IV=Summer; 2007-2008 offering in parentheses

General Education (GE) credit: ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Social-Cultural Diversity; Wrt=Writing Experience

teachers, and prepare students for international service.

### B.S. Major Requirements:

	UNITS
<b>Written and Oral Expression</b> .....	<b>8-16</b>
<b>See College requirement</b> .....	<b>0-8</b>
Select two courses (if not selected for English college requirement) from Communication 130, 134, 135, 136, 140; Nematology 150; University Writing Program 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, 104F .....	8
<b>Preparatory Subject Matter</b> .....	<b>69-72</b>
Animal Science 1 and 2 .....	8
Biological Sciences 1A, 1B, and one of 1C, Agricultural Management and Rangeland Resources 2, 110A, 112, or Environmental Horticulture 6 .....	13-15
Chemistry 2A, 2B, 8A, 8B .....	16
Agricultural Management and Rangeland Resources 21 or Computer Science Engineering 15 .....	3-4
Economics 1A, 1B; Management 11A, 11B .....	16
Mathematics 16A, 16B, and 16C or the more advanced mathematics courses .....	9
Agricultural Management and Rangeland Resources 120, Statistics 100 or 103, or other courses in quantitative skills with prior approval of the Master Adviser .....	4
<b>Breadth/General Education Subject Matter</b> .....	<b>12-24</b>
<b>Depth Subject Matter</b> .....	<b>27-30</b>
Biological Sciences 101 .....	4
Nutrition 115 .....	4
Neurobiology, Physiology, and Behavior 101 .....	5
Business Management.....	14-17
Agricultural and Resource Economics 100A; One course from Agricultural and Resource Economics 113, 130, 136, 138; One course from Agricultural and Resource Economics 120, 132, 140, 145, 157; Plus one course from Animal Science 128 or Agricultural and Resource Economics 155.	
<b>Area of Specializations</b> .....	<b>14-16</b>
Choose one area of specialization below.	
<b>Aquatic Animals</b> .....	<b>16</b>
Animal Science 18, 118 or 119, 131, and 148.	
<b>Companion Animals</b> .....	<b>16</b>
Animal Science 42, 140, 142, and 148.	
<b>Dairy</b> .....	<b>15</b>
Animal Science 41, 41L, 146, 147, and 148.	
<b>Equine</b> .....	<b>15</b>
Animal Science 15, 115, 141, and 148	
<b>Livestock</b> .....	<b>16</b>
Animal Science 41, 41L, 143 or 144, 145, and 148.	
<b>Poultry</b> .....	<b>15</b>
Avian Sciences 11, Animal Science 143, 145, and 148	
<b>Individualized</b> .....	<b>14-16</b>
Students may, with prior approval of their advisor and the Master Advisor, design their own individualized specialization within the major. The specialization will consist of 4 to 6 courses with one of the courses being Animal Science 148. The other courses will include an introduction, care and management, and processing and/or marketing aspects of the animal of interest.	
<b>Restricted Electives</b> .....	<b>8-10</b>
At least two additional courses (minimum 8 units; duplicate from Depth courses not	

counted) selected with approval of adviser from: Agricultural and Resource Economics 18, 112, 113, 118, 120, 130, 132, 136, 138, 140, 142, 143, 144, 145, 150, 155, 157, 171A, 171B, 176; Animal Science 103, 104, 105, 106, 115, 118, 119, 120, 120L, 123, 124, 125, 126, 127, 128, 129, 131, 136, 137, 140, 141, 142, 143, 144, 145, 146, 147, 149, 170, 192, 194, 194H; Avian Sciences 100, 103, 115, 121, 123, 149, 150; Animal Genetics 101, 105, 107, 111; Nutrition 122, 123, 123L, 124; Animal Biology 102 (strongly recommended), 103; Computer Science Engineering 124; Management 100; Neurobiology, Physiology, and Behavior 117, 121, 121L, 130; Wildlife, Fish, and Conservation Biology 120, 120L, 130.

### Unrestricted Electives .....

**12-42**

**Total Units for the Degree** .....

**180**

**Major Adviser.** J.G. Fadel  
**Advising Center** for the major (including peer advising) is located in 1202 Meyer Hall (530) 754-7915. *Students must secure their faculty adviser through this office upon entering the major.*

## Anthropology

(College of Letters and Science)

Bruce Winterhalder, Ph.D., Chairperson of the Department

**Department Office.** 330 Young Hall (530) 752-0745/0746;  
<http://www.anthro.ucdavis.edu>

### Faculty

Robert L. Bettinger, Ph.D., Professor  
Monique Borgerhoff Mulder, Ph.D., Professor  
Christyann Darwent, Ph.D., Assistant Professor  
Marisol de la Cadena, Ph.D., Associate Professor  
Donald L. Donham, Ph.D., Professor  
Joseph Dumit, Ph.D., Associate Professor  
(*Anthropology and Science and Technology Studies*)  
Jelmer W. Eerkens, Ph.D., Associate Professor  
Alexander H. Harcourt, Ph.D., Professor  
Lynne A. Isbell, Ph.D., Professor  
Suad Joseph, Ph.D., Professor  
(*Anthropology, Women and Gender Studies*)  
Alan Klima, Ph.D., Associate Professor  
Richard McElreath, Ph.D., Associate Professor  
Henry M. McHenry, Ph.D., Professor,  
*UC Davis Prize for Undergraduate Teaching and Scholarly Achievement*  
Suzana M. Sawyer, Ph.D., Associate Professor  
Janet S. Shibamoto Smith, Ph.D., Professor  
Carol A. Smith, Ph.D., Professor  
David G. Smith, Ph.D., Professor  
Smriti Srinivas, Ph.D., Associate Professor  
Teresa Steele, Ph.D., Assistant Professor  
Timothy D. Weaver, Ph.D., Assistant Professor  
Bruce P. Winterhalder, Ph.D., Professor  
Aram A. Yengoyan, Ph.D., Professor  
Li Zhang, Ph.D., Associate Professor

### Emeriti Faculty

David J. Boyd, Ph.D., Professor Emeritus  
Richard T. Curley, Ph.D., Senior Lecturer Emeritus  
William G. Davis, Ph.D., Professor Emeritus  
Jack D. Forbes, Ph.D., Professor Emeritus  
Sarah B. Hrdy, Ph.D., Professor Emerita  
David L. Olmsted, Ph.D., Professor Emeritus  
Peter S. Rodman, Ph.D., Professor Emeritus  
G. William Skinner, Ph.D., Professor Emeritus  
Carolyn F. Wall, Senior Lecturer Emerita

### The Major Program

Anthropology is the systematic study of human beings. The student of anthropology learns about human biology, ecology, and social life—past and present—and gains a broad understanding of

humans and societies. It is a diverse field, and the courses, faculty, and degree programs at UC Davis are subdivided into two wings—*Evolutionary* and *Sociocultural*.

**Evolutionary.** *Evolutionary anthropologists* are united by their common application of science to understand the behavior, ecology, history, and evolution of humans and non-human primates, as individuals and as societies. The many useful approaches to these topics bring together archaeology, human behavioral ecology, molecular anthropology, paleoanthropology, biogeography, conservation biology, and primatology. *Archaeology* is the study of the history or prehistory by analysis of a people's artifacts, or their material culture, with the goal of constructing culture history and reconstructing human behavior. *Human behavioral ecology* is the study of how variation in ecology and social organization can help us understand variation in human behavior. *Molecular anthropology* uses DNA to study the genetic relationships among different populations and the adaptive significance of specific genetic traits. *Paleoanthropology* uses comparisons among fossilized remains to understand what morphological changes occurred during the course of human evolution. *Biogeography* investigates the biology behind the geographic distribution of species, and also of human cultures. *Conservation biology* explores the causes of loss of biological diversity—in this department, it focuses on threatened non-human primates and the conservation of natural resources by a rapidly growing population. *Primatology* is the study of behavior, ecology and morphology of primates to address questions about the evolution and function of behavioral and morphological patterns in nonhuman primates and to test models of the origins of human morphology and behavior.

**Sociocultural.** *Sociocultural anthropologists* study the varied ways in which people around the world organize their lives and interpret the circumstances in which they operate. Their principle method is extended field research, which combines attention to global issues with the close study of human relations and culture. Among the themes addressed in the department's undergraduate courses are globalization and transnationalism; human ecology and environmental change; the global spread of media and technology; migration, multiculturalism and urban life; colonialism, neocolonialism and development; race, class and gender; rebellion, resistance and the cultural politics of everyday life; language use and discourse; and self, identity and family. The track in sociocultural anthropology thus offers an unusually rich set of resources for understanding and engaging pressing issues in a globalizing world characterized by new forms of international culture and community as well as by increasing material inequality and political volatility.

**The Program.** The Bachelor of Arts program is divided into two tracks, *Sociocultural* and *Evolutionary*, which parallel the two wings described above. Students interested in the study of recent and contemporary human languages and societies should follow the Sociocultural Track. To obtain a B.A. degree in sociocultural anthropology, each student is required to complete courses that provide (1) foundational skills, (2) language and cultural skills, (3) comprehensive skills, and (4) specialized skills. Students interested in the study of archaeology; primate studies; or human biology, ecology or origins should follow the Evolutionary Track. The B.A. degree offered by the Evolutionary Track provides general training in anthropology from an evolutionary perspective. The Evolutionary Track also offers a B.S. degree that requires more rigorous lower division coursework in math and science than the A.B. degree and upper division coursework in biological anthropology and closely related disciplines.

Students in both tracks are encouraged to gain practical experience through courses taken while studying abroad (under the administration of the Education Abroad Center) and through internships performed for credit (under the administration of the Internship and Career Center). Students showing exceptional ability are welcome to seek permission