ANIMAL SCIENCE (ASCI)

undefined

ASCI Courses

ASCI 1100 Introduction to the Animal Sciences (1 unit)
Term Typically Offered: F
CR/NC

Orientation to the Animal Science and Dairy Science programs. Overview of professional opportunities in disciplines related to animal science. Emphasis on academic planning and career preparation. Required of all first-time students in the Animal Science Department. Credit/No Credit grading only. 1 lecture. Formerly ASCI 101.

ASCI 1101 Principles of Animal Physiology (3 units)
Term Typically Offered: F, SP

Introduction to the fundamental aspects of anatomy and physiology applied to farm and companion animals. Not open to students with credit in ASCI 112 or ASCI 1112. Course may be offered in classroom-based or online format. 3 lectures.

ASCI 1102 Animal Management Systems (3 units)
Term Typically Offered: F, SP
Concurrent: ASCI 1103.

Origins of animal domestication and the use of animals for food production, specialized assistive tasks, transportation, companionship, recreation, and science. Current issues in animal science including animal welfare, biosecurity, and One Health. Not open to students with credit in ASCI 112 or ASCI 1112. 3 lectures.

ASCI 1103 Animal Science Laboratory (1 unit)
Term Typically Offered: F, SP
Concurrent: ASCI 1102.

Addresses the importance of product technology and the basic principles of nutrition, genetics, physiology, and behavior as they apply to breeding, selection, feeding, management, and product development in a laboratory setting using live animals. Not open to students with credit in ASCI 112 or ASCI 1112. 1 laboratory.

ASCI 1112 Principles of Animal Science (3 units)
Term Typically Offered: F, SP
2026-28 or later catalog: GE Area 5B
2020-26 catalogs: GE Area B2

Comparative physiology of digestive, endocrine, and reproductive systems in animals. Principles of animal nutrition, genetics, growth, behavior, and food processing and safety. Current issues including biosecurity, animal welfare, and government safeguards for human and animal health. Not open to Animal Science or Dairy Science majors. Course may be offered in classroom-based or online format. 3 lectures. Fulfills GE Area 5B (GE Area B2 for students on the 2020-26 catalogs). Formerly ASCI 112.

ASCI 1120 Equine Handling and Training (2 units)
Term Typically Offered: F
CR/NC
Prerequisite: Consent of instructor.

Training of weanling and yearling horses at halter. Selection of proper attire for the handler and equipment for the horse. Application of safe, behavioral training techniques enabling the horse to accept handling and health care. Credit/No Credit grading only. 2 activities. Formerly ASCI 265.

ASCI 1121 Introductory Equitation (2 units)
Term Typically Offered: F, SP
CR/NC
Prerequisite: Consent of instructor.

Beginning horseback riding. Selection of appropriate tack/equipment and practical equine management practices. Emphasis on student understanding of equine behavior, safety/risk reduction, horsemanship skills. Credit/No Credit grading only. 2 activities. Formerly ASCI 214.

ASCI 1122 Intermediate Equitation (2 units)
Term Typically Offered: F, SP
CR/NC
Prerequisite: Consent of instructor. Recommended: ASCI 214 or ASCI 1121.

Development of intermediate level skills in riding and horsemanship. Selection of appropriate tack/equipment, understanding of equine behavior, and safety/risk reduction. Credit/No Credit grading only. 2 activities. Replaces ASCI 344.

ASCI 2001 Beef Cattle Enterprise (1 unit)
Term Typically Offered: F
CR/NC
Recommended: ASCI 2230.

Entry-level experience in the care and management of beef cows and calves during and after parturition. Credit/No Credit grading only. Half-semester course. 1 activity.

ASCI 2002 Broiler Production Enterprise (2 units)
Term Typically Offered: SP
CR/NC
Recommended: ASCI 2231.

Entry-level experience in broiler flock management. Basic husbandry and rearing practices, health management, necropsies, nutrition, and record keeping. Credit/No Credit grading only. 2 lectures.

ASCI 2003 Bull Test Enterprise (2 units)
Term Typically Offered: SP
CR/NC
Recommended: ASCI 2230.

Entry-level experience in procedures and skills for beef bull management including: cattle handling, restraint, nutritional management, health management, vaccination, animal behavior, carcass ultrasound, and breeding soundness exams. Field trip may be required. Credit/No Credit grading only. 1 lecture, 1 activity.

ASCI 2004 Dairy Calving Enterprise (1 unit)
Term Typically Offered: F, SP
CR/NC
Prerequisite: Consent of instructor.

Entry-level experience in monitoring pregnant dairy cows. Management and processing of newborn calves including: colostrum management, dehorning, vaccination, identification, and handling. Assistance with calving as needed under supervision. Credit/No Credit grading only. Half-semester course. 1 lecture.

ASCI 2005 Dairy Fit and Show Enterprise (1 unit)
Term Typically Offered: SP
CR/NC

Entry-level experience in the selection of dairy cattle using type conformation. Correlation between type and production. Dairy cattle breeds and breed comparisons. Techniques to properly condition, groom and present dairy cattle for evaluation and merchandizing. Credit/No Credit grading only. Half-semester course. 1 activity. Formerly DSCI 241.

ASCI 2006 Dairy Herd Evaluation Enterprise (2 units)
Term Typically Offered: SP
CR/NC
Prerequisite: Consent of instructor.

Entry-level experience in evaluation of dairy farm records. On-farm observations to identify and present opportunities for improvement in dairy farm operations. Field trip required. Credit/No Credit grading only. 2 activities.

ASCI 2007 Dairy Products Evaluation Enterprise (1 unit)
Term Typically Offered: F
CR/NC

Entry-level experience in evaluation of dairy products (milk, cheese, yogurt, butter, ice-cream) based on flavor, body/texture and appearance. Utilization of method honed sensory skills and standardized scorecards to evaluate and score products. Repeatable up to 3 units. Credit/No Credit grading only. 1 activity.

ASCI 2008 Equine Care Enterprise (1 unit)
Term Typically Offered: F, SP
CR/NC
Prerequisite: Consent of instructor.

Entry-level experience in horse care, behavior and handling. Learn and practice basic horse care including grooming, feeding and stall cleaning. Credit/No Credit grading only. Half-semester course. 1 activity.

ASCI 2009 Foaling Enterprise (2 units)
Term Typically Offered: SP
CR/NC
Prerequisite: Consent of instructor. Recommended: ASCI 2008.

Entry level experience in the care and management of the broodmare and foal herd. Will work with classmates to provide 24-hour foal watch to assist with foaling and neonatal care. Credit/No Credit grading only. 2 lectures.

ASCI 2010 Lambing Enterprise (1 unit)
Term Typically Offered: SP
CR/NC
Prerequisite: Consent of instructor.

Entry-level experience in late gestation, parturition, dystocia, and critical newborn lamb care. Repeatable up to 2 units. Credit/No Credit grading only. Half-semester course. 1 lecture.

ASCI 2011 Performance Horse Development Enterprise (3 units)
Term Typically Offered: F
CR/NC
Prerequisite: ASCI 345 or ASCI 2123; and consent of instructor.

Selection and development of performance horse prospects, culminating in successful sale at the annual Cal Poly Performance Horse Sale. Credit/No Credit grading only. 3 activities.

ASCI 2012 Reptile Husbandry Enterprise (1 unit)
Term Typically Offered: F, SP, SU
CR/NC
Prerequisite: Consent of instructor.

Introduction and application of evidence-based animal management practices with reptiles such as leopard tortoises. Animal identification methods, biosecurity, employ metric system, data collection and documentation to deliver standards of animal care as a team. Credit/No Credit grading only. Half-semester course. 1 lecture.

ASCI 2013 Sausage Production Enterprise (2 units)
Term Typically Offered: F, SP
CR/NC

Entry-level experience in sausage production at the Cal Poly Meat Processing Center. Review of HACCP principles. Sale of sausage at local farmers' market. Repeatable up to 4 units. Credit/No Credit grading only. 2 activities.

ASCI 2014 Swine Enterprise (1 unit)
Term Typically Offered: F, SP
CR/NC

Entry-level experience in all aspects of swine management. Hands-on experience in breeding, farrowing, processing, and marketing swine. Credit/No Credit grading only. 1 lecture.

ASCI 2015 Targeted Grazing Enterprise (1 unit)
Term Typically Offered: F, SP
CR/NC
Recommended: ASCI 2232.

Entry-level experience in the use of sheep and goats as instruments of land management to obtain specific vegetative goals. Field trip may be required. Repeatable up to 2 units. Credit/No Credit grading only. 1 lecture.

ASCI 2016 Veterinary Clinic Operations Enterprise (1 unit)
Term Typically Offered: F, SP
CR/NC

Entry-level experience in procedures and skills in veterinary medicine and veterinary clinic operations. Animal restraint, examination, diagnostic sample preparation, injection techniques, surgical pack preparation, anesthesia equipment and maintenance, inventory, prescriptions, and record-keeping. Credit/No Credit grading only. Half-semester course. 1 lecture.

ASCI 2017 Livestock Show Enterprise (1 unit)
Term Typically Offered: SP
CR/NC

Entry-level experience experience in planning, organizing, financing, and promoting a livestock show. Repeatable up to 2 units. Credit/No Credit grading only. Half-semester course. 1 activity. Formerly ASCI 212.

ASCI 2123 Advanced Equitation and Colt Starting (3 units)
Term Typically Offered: F
Prerequisite: ASCI 344 or ASCI 1122; and consent of instructor.

Development of advanced riding and horsemanship skills. Introduction to training techniques of young horses to be ridden under saddle. Students must provide supplemental course materials fee prior to enrollment. 3 activities. Replaces ASCI 345.

ASCI 2200 Special Problems (1-3 units)
Term Typically Offered: TBD
CR/NC
Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of special problems. Repeatable up to 3 units. Credit/No Credit grading only. Formerly ASCI 200.

ASCI 2210 Meat Science (2 units)
Term Typically Offered: F, SP

Muscle food processing methods and operations. Conversion of muscle to meat. Meat inspection, grading, composition, preservation, food safety, and related topics. Carcass beef, pork, and chicken processed into consumer-ready products. Course may be offered in classroom-based or online format. 2 lectures. Formerly ASCI 211.

ASCI 2211 Meat Science Laboratory (1 unit)
Term Typically Offered: F, SP
Prerequisite: Non-Animal Science major or Animal Science major and concurrent: ASCI 2210.

Muscle food processing methods and operations. Conversion of muscle to meat. Meat inspection, grading, composition, preservation, and food safety. Carcasses processed into consumer-ready products. Course may be offered in classroom-based or online format. 1 laboratory.

ASCI 2215 Safe Handling of Animal-Derived Foods (4 units)
Term Typically Offered: SP
2026-28 or later catalog: GE Area 5B
2026-28 or later catalog: GE Area 5C
2020-26 catalogs: GE Area B2
2020-26 catalogs: GE Area B3

Safe food handling of meat, dairy, and egg products, emphasizing consumer knowledge in food safety from farm to table. Detection, enumeration, and identification of pathogens and indicator microorganisms in animal-derived food products. Course may be offered in classroom-based or online format. 3 lectures, 1 laboratory. Fulfills GE Areas 5B and 5C (GE Areas B2 and B3 for students on the 2020-26 catalogs). Formerly ASCI 215.

ASCI 2220 Animal Nutrition and Feeding (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 112 or ASCI 1101; BIO 161 or BIO 1151; and CHEM 124, CHEM 127, or CHEM 1120.

Nutrient digestion and absorption in animals, basic functions of nutrient classes, and nutrient requirements. Feed characteristics, classification, analysis and practical applications. Feed labeling regulation and best practices. Diet formulation techniques. 2 lectures, 1 laboratory. Formerly ASCI 220.

ASCI 2226 Livestock Evaluation (2 units)
Term Typically Offered: SP
Recommended: ASCI 112 or ASCI 1102.

Comparative evaluation of breeding and marketing animals. Selecting and grading for breeding and performance of beef cattle, swine, and sheep. Emphasis on accurate, clear, and concise oral reasoning. 2 laboratories. Formerly ASCI 226.

ASCI 2229 Anatomy and Physiology of Farm Animals (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 112 or ASCI 1101: and BIO 161 or BIO 1151.

Comprehensive overview of the principal organ systems of farm animals using an integrative, systemic approach to learning the mechanisms of homeostasis in mammals with application to their daily care and management. 2 lectures, 1 laboratory. Formerly ASCI 229.

ASCI 2230 Beef and Dairy Cattle Management (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 112; or ASCI 1101, ASCI 1102, and ASCI 1103.

Selection, breeding, feeding, and management of beef and dairy cattle. Composition and value of beef and dairy products. Overview of marketing factors influencing the production systems. 2 lectures, 1 laboratory.

ASCI 2231 Swine and Poultry Management (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 112; or ASCI 1101, ASCI 1102, and ASCI 1103.

Application of biological principles to the production of swine and poultry. Overview of the swine and poultry industries, biosecurity and health, feeding and nutrition, production and processing systems and management. Not open to students with credit in ASCI 222 and ASCI 225. 2 lectures, 1 laboratory.

ASCI 2232 Small Ruminant and Rangeland Management (3 units)
Term Typically Offered: F, SP
Sustainability Focused
Prerequisite: ASCI 112; or ASCI 1101, ASCI 1102, and ASCI 1103.

Small ruminant management, industry and application in ecologically sustainable grazing systems. Introduction to rangeland ecology and management, with applications to livestock grazing for natural resource management. 2 lectures, 1 laboratory.

ASCI 2233 Companion Animal Management (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 112; or ASCI 1101, ASCI 1102, and ASCI 1103.

Equine and other companion animal (canine, feline, reptiles, small mammals kept as pets) anatomy and physiology, management, behavior, reproduction, nutrition, and common diseases. Human-animal bond and zoonotic principles. Current pet industry trends including animal welfare issues. Course may be offered in classroom-based or hybrid format. 2 lectures, 1 laboratory.

ASCI 2239 Principles of Rangeland Management (3 units)
Term Typically Offered: TBD

Characteristics of rangeland ecosystems, processes of directing ecological change, the history of their management, particularly in North America. Laboratory activities introduce basic ecological monitoring practices, including quantification of biomass, soil cover, and species composition. 2 lectures, 1 laboratory. Formerly ASCI 239.

ASCI 2270 Special Topics (1-3 units)
Term Typically Offered: TBD
Prerequisite: Consent of Instructor.

Directed group study of special topics. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly ASCI 270.

ASCI 3302 Animal Genetics (3 units)
Term Typically Offered: F, SP
Prerequisite: BIO 111, BIO 161, or BIO 1151; and STAT 218 or STAT 1110.

Principles of modern classical genetics. Mendelian genetics, meiosis, mitosis, DNA structure and replication, gene mapping, chromosome rearrangement, mutations, genetic variants, gene regulation, transcription, translation, and population, quantitative, and molecular genetics in animals and humans. Course may be offered in classroom-based or online format. 3 lectures. Formerly ASCI 302.

ASCI 3303 Animal Parasitology (3 units)
Term Typically Offered: F
Prerequisite: ASCI 229 or ASCI 2229.

Diagnosis, management, and treatment of internal and external parasites in livestock, companion animals, and wildlife. Pathophysiology of parasitic infections in animals. 2 lectures, 1 laboratory. Replaces ASCI 203.

ASCI 3304 Animal Genomics (2 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 302 or ASCI 3302.

Application of genetic principles for domestic animal improvement. Improving animal performance and health through use of genetic markers and diagnostics, gene mapping, and related current technologies. Course may be offered in classroom-based or online format. 2 lectures. Formerly ASCI 304.

ASCI 3310 Technical Veterinary Skills (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 229 or ASCI 2229.

Restraint and handling of animals, physical examination, necropsy, wound management, applied pharmacology, and medical record keeping. Assisting with clinical procedures including intravenous catheter placement, fluid administration, venipuncture, imaging, anesthesia, and surgery. 2 lectures, 1 laboratory. Formerly ASCI 310.

ASCI 3311 Advanced Beef Cattle System Management (3 units)
Term Typically Offered: TBD
Prerequisite: ASCI 221 or ASCI 2230.

Sustainable beef production. Systems approach for financial analysis, range management, breeding systems, nutrition, health programs, marketing, and production practices to enhance profitability and efficiency of commercial cow-calf operations. 2 lectures, 1 laboratory. Formerly ASCI 311.

ASCI 3312 Production Medicine (2 units)
Term Typically Offered: F
Prerequisite: ASCI 229 or ASCI 2229; one of the following: ASCI 221, ASCI 2001, ASCI 2003, ASCI 2004, ASCI 2006, ASCI 2230, ASCI 4002, ASCI 4003, ASCI 4005, ASCI 4006, or DSCI 230; and one of the following: ASCI 222, ASCI 223, ASCI 224, ASCI 225, ASCI 227, ASCI 2231, ASCI 2232, or ASCI 2233.

Basic disease concepts, fundamentals of immunology, antimicrobial stewardship, therapeutics, and disease prevention principles (infectious and non-infectious) on a herd level. Pre-harvest food safety, milk and meat quality assurance. Herd health management programs for production efficiency and product quality. 2 lectures. Formerly ASCI 312.

ASCI 3319 Physiological Chemistry of Animals (3 units)
Term Typically Offered: F, SP
2026-28 or later: Upper-Div GE Area 2/5
2020-26 catalogs: Upper-Div GE Area B
Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); one of the following: ASCI 229, ASCI 2229, BIO 231, BIO 2231, BIO 361, or BIO 3352; and one of the following: CHEM 212, CHEM 216, CHEM 2242, CHEM 312, or CHEM 2240. Recommended: One of the following: DATA 1000, STAT 130, STAT 218, or STAT 1110.

Integration of the principles of chemistry, biochemistry, physiology and nutrition to understand metabolism of carbohydrates, lipids and proteins at the cellular, organ and whole animal level. Regulation and coordination of metabolic function within and across tissues in animals. Course may be offered in classroom-based or online format. 3 lectures. Fulfills GE Area Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly ASCI 319.

ASCI 3321 Zoonoses and Veterinary Public Health Concerns (3 units)
Term Typically Offered: SP
Prerequisite: BIO 161 or BIO 1151.

Public health concerns related to animal and bird diseases transmissible to humans, environmental public health hazards, and antimicrobial resistance. Focus on One Health concepts: the relationships between humans, animals, and the environment. 3 lectures. Formerly ASCI 321.

ASCI 3339 Internship in Animal Science (1-4 units)
Term Typically Offered: F, SP
CR/NC
Prerequisite: Consent of department head.

Work with an approved agriculture firm or related to animal science. Develop production and managerial skills through practices. Repeatable up to 8 units. Credit/No Credit grading only. Formerly ASCI 339.

ASCI 3340 Animal Welfare and Ethics (3 units)
Term Typically Offered: F, SP
Prerequisite: Junior Standing.

Introduction to moral principles that have shaped the field of animal welfare science. Definition of Animal Welfare. Identification of science-based measures of welfare. Current welfare concerns with companion, laboratory, production, and exotic animals. Course may be offered in classroom-based or online format. 3 lectures. Formerly ASCI 340.

ASCI 3346 Equine Nutrition (3 units)
Term Typically Offered: SP
Prerequisite: ASCI 220 or ASCI 2220 with a grade of C- or better.

Equine gastrointestinal anatomy and physiology, feeding ecology. Nutrient requirements, feed characteristics, analysis and practical applications. Diet formulation and evaluation. Management of common metabolic and nutrition imbalances. 2 lectures, 1 laboratory. Formerly ASCI 346.

ASCI 3347 Equine Exercise Physiology (2 units)
Term Typically Offered: TBD
Prerequisite: ASCI 229 or ASCI 2229; and ASCI 224 or ASCI 2233.

Applied physiology of the exercising horse. Examination of musculoskeletal, cardiovascular, respiratory, and endocrine systems. Energetics of metabolism during exercise. Physiological adaptations to conditioning of horses. Gait analysis and common equine sports injuries. 2 lectures. Formerly ASCI 347.

ASCI 3350 Nonruminant Nutrition (3 units)
Term Typically Offered: F
Prerequisite: ASCI 220 or ASCI 2220 with a grade of C- or better or consent of instructor.

Comparison of the digestive physiology and nutrition of nonruminants. Digestive tract anatomy, energy and nutrient requirements, diet formulation and processing, nutritional management. 2 lectures, 1 laboratory. Formerly ASCI 350.

ASCI 3351 Mechanisms of Hormone Action and Reproductive Physiology (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 229 or ASCI 2229.

Synthesis, secretion, and mechanisms of hormone action. Comparative animal reproductive anatomy and physiology including gametogenesis, behavior, gestation, parturition and mothering. 3 lectures. Formerly ASCI 351.

ASCI 3355 Ruminant Nutrition (3 units)
Term Typically Offered: F, SP
Prerequisite: ASCI 220 or ASCI 2220; and STAT 218 or STAT 1110.

Gastrointestinal tract form and function, ingredient characterization and utilization, post-absorptive metabolism, diet formulation, and nutritional management, as applied to ruminant livestock. 2 lectures, 1 laboratory. Formerly ASCI 355.

ASCI 3360 Holistic Management (3 units)
Term Typically Offered: TBD
2026-28 or later: Upper-Div GE Area 2/5
2020-26 catalogs: Upper-Div GE Area B
Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); and completion of GE Area 5 (GE Areas B1 to B3 for the 2020-26 catalogs).

Application of holistic management, a goal-oriented, value-driven framework for making ecologically, economically, and socially sound decisions. Holistic approach to management, especially of land-based resources, aimed toward greater biodiversity and sustainability. Field trip may be required. 2 lectures, 1 laboratory. Crosslisted as AG/ASCI 3360. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly AG/ASCI 360.

ASCI 3363 Professional Development in the Animal Sciences (1 unit)
Term Typically Offered: F, SP
Prerequisite: Junior standing.

Animal or dairy science career development and personal branding. Interpersonal communication and resume development. Interpretation of scientific articles, research-based oral presentations, and interviewing skills. Course may be offered in classroom-based or online format. 1 lecture. Formerly ASCI 363.

ASCI 3366 Veterinary Pharmacology (2 units)
Term Typically Offered: TBD
Prerequisite: ASCI 229 or ASCI 2229; and one of the following: CHEM 216, CHEM 312, CHEM 2240, or CHEM 2242.

Investigation of pharmacological principles applied to animal systems. Overview of drugs acting on the nervous, endocrine, circulatory, urinary, and reproductive systems. Specialty areas of pharmacology, and pharmacogenomics of livestock and companion animals. 2 lectures. Formerly ASCI 366.

ASCI 3370 Rangeland Improvements (2 units)
Term Typically Offered: TBD
Prerequisite: ASCI 239, ASCI 2239, or ASCI 2232.

Review of practices used for improving the productivity or ecological functions of rangeland landscapes managed for grazing livestock, wildlife, or for ecological and/or aesthetic values. Course may be offered in classroom-based or online format. 2 lectures. Formerly ASCI 370.

ASCI 3372 California Rangeland and Ranch Resource Management (3 units)
Term Typically Offered: TBD
Prerequisite: ASCI 239, ASCI 2239, or ASCI 2232.

Rangeland conservation and management practices recommended for environmental protection in California. Includes water quality protection, sensitive species/habitat management, principles of fuels management, and practices appropriate to rangeland ecosystems for reduction of wildfire risk. Field trip may be required. 3 lectures. Formerly ASCI 372.

ASCI 4001 Artificial Insemination of Beef Cattle Advanced Enterprise (1 unit)
Term Typically Offered: F
CR/NC
Prerequisite: One of the following: ASCI 351, ASCI 3351, DSCI 330, or DSCI 3330.

Advanced experience in heat detection, estrous synchronization and artificial insemination of beef cattle. Credit/No Credit grading only. Half-semester course. 1 activity.

ASCI 4002 Bull Test Management Advanced Enterprise (2 units)
Term Typically Offered: SP
CR/NC
Prerequisite: ASCI 2003.

Management of a beef bull genetic evaluation program using advanced skills to implement the annual bull sale. Student managers are responsible for training their peers in the following activities: nutritional management, health management, event planning, and marketing. Field trip may be required. Credit/No Credit grading only. 1 lecture, 1 activity.

ASCI 4003 Bull Test Sale Implementation Advanced Enterprise (1 unit)
Term Typically Offered: F
CR/NC
Prerequisite: ASCI 4002.

Advanced experience in management of the annual Cal Poly Bull Test Sale. Beef cattle marketing, biotechnology, event planning, leadership skills, multimedia applications, and peer mentorship. Credit/No Credit grading only. Half-semester course. 1 activity.

ASCI 4004 Equine Mustang Management Advanced Enterprise (2 units)
Term Typically Offered: F
CR/NC
Prerequisite: Consent of instructor.

Advanced experience in managing the care, training, conditioning, and showcasing of mustangs and other horses used for university events on and off campus. Repeatable up to 4 units. Credit/No Credit grading only. 2 activities.

ASCI 4005 Ranch Management I Advanced Enterprise (1 unit)
Term Typically Offered: F
CR/NC
Prerequisite: ASCI 2230.

Advanced beef cattle and ranch management experience focused on low-stress cattle handling, calving and breeding management. Repeatable up to 2 units. Credit/No Credit grading only. 1 activity.

ASCI 4006 Ranch Management II Advanced Enterprise (1 unit)
Term Typically Offered: SP
CR/NC
Prerequisite: ASCI 2230.

Advanced beef cattle and ranch management focused on vaccination, weaning, pregnancy diagnosis, and land management. Repeatable up to 2 units. Credit/No Credit grading only. 1 activity.

ASCI 4007 Horse and Mule Packing Advanced Enterprise (1 unit)
Term Typically Offered: SP
CR/NC
Prerequisite: Consent of instructor.

Advanced experience in training and packing horses and mules to carry trail worthy loads and participating in packing competitions. Repeatable up to 2 units. Credit/No Credit grading only. 1 activity.

ASCI 4008 Livestock Event Planning Advanced Enterprise (2 units)
Term Typically Offered: F
CR/NC
Prerequisite: ASCI 212 or ASCI 2017; and consent of instructor.

Advanced experience in livestock event planning. Organization and planning for the Western Bonanza Junior Livestock Show. Repeatable up to 4 units. Credit/No Credit grading only. 2 lectures. Formerly ASCI 412.

ASCI 4009 Livestock Event Implementation Advanced Enterprise (1 unit)
Term Typically Offered: SP
CR/NC
Prerequisite: ASCI 412 or ASCI 4008.

Advanced experience in livestock show implementation. Student management of the Western Bonanza Junior Livestock Show. Repeatable up to 2 units. Credit/No Credit grading only. Half-semester course. 1 activity. Formerly ASCI 413.

ASCI 4010 Livestock Judging Advanced Enterprise (1 unit)
Term Typically Offered: F
CR/NC
Prerequisite: Consent of instructor.

Advanced analysis and application of factors involved in the selection and evaluation of cattle, sheep, goats, and swine for breeding and slaughter. Presentation of concise oral and/or written reasons to defend selection decisions. Training for college Livestock Judging Team. Credit/No Credit grading only. 1 laboratory.

ASCI 4011 Marine Mammal Health Advanced Enterprise (3 units)
Term Typically Offered: SP
CR/NC
Prerequisite: Consent of instructor.

Participation in NOAA West Coast Stranding Network through a professional partnership with The Marine Mammal Center. Field response of sick and injured marine mammals, animal care, basic medical skills, oiled wildlife response training, investigation of population health concerns. Field trip required. Credit/No Credit grading only. 3 lectures.

ASCI 4012 Performance Horse Production Advanced Enterprise (3 units)
Term Typically Offered: SP
CR/NC
Prerequisite: ASCI 2011 and consent of instructor.

Further training of the horses for the annual Cal Poly Performance Horse Sale. Credit/No Credit grading only. 3 activities.

ASCI 4013 Equine Sale Event Planning Advanced Enterprise (3 units)
Term Typically Offered: F
CR/NC
Prerequisite: ASCI 4012 and consent of instructor.

Introduction to equine sales preparation. Design and implement a training program to maximize the saleability of the performance horse. Credit/No Credit grading only. 3 activities.

ASCI 4014 Equine Sale Event Implementation Advanced Enterprise (3 units)
Term Typically Offered: SP
CR/NC
Prerequisite: ASCI 4013 and consent of instructor.

Preparation and implementation of a commercial equine sale event, including budgeting, risk management, marketing, promotion. Critical analysis of the individual performance horse as a sales prospect and adaptation to optimized marketability. Credit/No Credit grading only. 1 seminar, 2 activities.

ASCI 4015 Veterinary Community Service Advanced Enterprise (2 units)
Term Typically Offered: SP
CR/NC
Prerequisite: ASCI 2016.

Advanced experience in Cal Poly Community Veterinary Service Clinics. Field experience providing basic wellness veterinary services (physical exams, flea and tick prevention, vaccination, and nail trims) to pets of the homeless members of the local community. Field trip required. Credit/No Credit grading only. 2 activities.

ASCI 4400 Special Problems for Advanced Undergraduates (1-3 units)
Term Typically Offered: TBD
CR/NC
Prerequisite: Consent of instructor.

Individual investigation, research, studies, or surveys of special problems. Repeatable up to 3 units. Credit/No Credit grading only. Formerly ASCI 400.

ASCI 4403 Applied Biotechnology in Animal Science (3 units)
Term Typically Offered: TBD
Prerequisite: BIO 161 or BIO 1151; and one of the following: ASCI 302, ASCI 3302, BIO 302, BIO 3312, BIO 351, or BIO 3351; or graduate standing.

Coverage of current resources, techniques and methodologies used in animal research and biotechnology as well as experimental design, model assessment, and data interpretation with application to an experimental setting in the laboratory. 1 lecture, 2 laboratories. Formerly ASCI 403.

ASCI 4405 Domestic Livestock Endocrinology (3 units)
Term Typically Offered: TBD
Prerequisite: One of the following: ASCI 229, ASCI 2229, BIO 361, or BIO 3352.

Endocrine physiology with emphasis on the influence of hormones involved in digestion, metabolism and growth. Endocrine regulation of thyroid, parathyroid, and adrenal glands. Aspects of of reproduction, pregnancy, and lactation. Receptor hypothesis and signal transduction. 3 lectures. Formerly ASCI 405.

ASCI 4406 Animal Embryology and Assisted Reproduction (3 units)
Term Typically Offered: F
Prerequisite: ASCI 229 or ASCI 2229; and ASCI 351 or ASCI 3351.

Comparative physiology including molecular understanding of oocyte and spermatozoa development and in vitro fertilization. Culturing, cryopreservation and micromanipulation of gametes and embryos. 2 lectures, 1 activity. Formerly ASCI 406.

ASCI 4407 Assisted Reproduction Technologies and Laboratory (2 units)
Term Typically Offered: SP
Prerequisite: ASCI 229 or ASCI 2229; ASCI 351 or ASCI 3351; and ASCI 406 or ASCI 4406.

Coverage of advanced techniques and methodologies of assisted reproduction of gametes and embryos involving in-vivo collection, in-vitro fertilization, cryopreservation and micromanipulation. 1 lecture, 1 laboratory. Formerly ASCI 407.

ASCI 4410 Applied Animal Behavior Science (3 units)
Term Typically Offered: SP
Prerequisite: Graduate standing; or Junior standing and ASCI 229 or ASCI 2229.

Principles of behavior applied to animals in managed environments. Observation and measurement of behavior, including sampling and recording methods. Learning, including training and operant conditioning. Discussion of issues related to behavioral welfare. Etiology and management of maladaptive behavior. 2 lectures, 1 laboratory. Formerly ASCI 410.

ASCI 4415 HACCP for Meat and Poultry Operations (3 units)
Term Typically Offered: SP
Prerequisite: One of the following: Graduate standing, ASCI 211, ASCI 2210, or FDSC 3330.

Using Hazard Analysis and Critical Control Point (HACCP) principles to develop regulatory inspection plans for meat and poultry operations; development and use of prerequisite programs; microbiological control and process overviews. Course may be offered in classroom-based or online format. 3 lectures. Formerly ASCI 415.

ASCI 4419 Animal Metabolism and Nutritional Modeling (3 units)
Term Typically Offered: SP
Prerequisite: ASCI 220 or ASCI 2220 with grade of C- or better; and one of the following: ASCI 319, ASCI 3319, CHEM 319, CHEM 3350, CHEM 369, or CHEM 3352.

Relation of nutrient metabolism to animal production. Methods of determining and predicting nutrient requirements and approaches to developing animal nutritional models. Course may be offered in classroom-based or online format. 3 lectures. Formerly ASCI 419.

ASCI 4425 Meat Industry Study Tour (1 unit)
Term Typically Offered: SP
Prerequisite: Graduate standing, ASCI 211, or ASCI 2210.

Study tour of commercial meat businesses. Livestock harvest and carcass fabrication, further meat processing, retail and food service operations. Personnel, processing procedures, regulatory standards, industry specifications and current issues. Travel for 4 days. 1 activity. Formerly ASCI 425.

ASCI 4438 Systemic Animal Physiology (4 units)
Term Typically Offered: F, SP
Prerequisite: Graduate standing; or ASCI 229 or ASCI 2229. Recommended: One of the following: ASCI 319, ASCI 3319, CHEM 314, CHEM 3350, CHEM 369, or CHEM 3352.

Homeostatic functions in organ systems, integration of systems, and how disruptions in homeostasis result in disease. Neurology, cardiovascular, respiratory, gastrointestinal, urogenital, and endocrinologic systems. 3 lectures, 1 laboratory. Formerly ASCI 438.

ASCI 4440 Immunology and Diseases of Animals (3 units)
Term Typically Offered: SP
Prerequisite: ASCI 229 or ASCI 2229.

Examination of the immune system of domesticated animals. Immunological analyses and examination of current disease issues. Field trip may be required. 2 lectures, 1 laboratory. Formerly ASCI 440.

ASCI 4455 Equine Reproduction (3 units)
Term Typically Offered: SP
Prerequisite: ASCI 224 or ASCI 2233; and ASCI 351 or ASCI 3351.

Reproductive anatomy and physiology of the mare and stallion. Assisted reproductive technologies in horses; management of sub-fertile horses, donor and recipient mares; manipulation of endocrine system; embryo technologies; cryobiology of gametes and embryos. 2 lectures, 1 laboratory. Formerly ASCI 455.

ASCI 4460 Rangeland Assessment and Planning (3 units)
Term Typically Offered: TBD
Prerequisite: ASCI 239, ASCI 2239, or ASCI 2232.

Examination of methods used for evaluating rangeland ecosystems, and the application of planning processes used in the management of rangelands and associated ecosystems. Field trip may be required. 2 lectures, 1 laboratory. Formerly ASCI 460.

ASCI 4470 Special Advanced Topics (1-3 units)
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 lectures. Formerly ASCI 470.

ASCI 4471 Special Advanced Laboratory (1-3 units)
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group laboratory study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 laboratories. Formerly ASCI 471.

ASCI 4477 Senior Project - Research Experience in Animal Science (2 units)
Term Typically Offered: F, SP, SU
Prerequisite: Senior standing; ASCI 363 or ASCI 3363; and consent of instructor. Recommended: STAT 218 or STAT 1110.

Independent research experience in a specific area of animal science conducted under faculty supervision. Satisfies senior project requirement. Formerly ASCI 477.

ASCI 4478 Senior Project - Advanced Internship Experience in Animal Science (2 units)
Term Typically Offered: F, SP, SU
Prerequisite: Senior standing; ASCI 363 or ASCI 3363; and consent of department head.

Independent internship experience conducted under faculty supervision focusing on a discipline area of animal science. Completion of a project as a component of the internship. Satisfies senior project requirement. Formerly ASCI 478.

ASCI 4479 Senior Project - Current Issues in Animal Science (2 units)
Term Typically Offered: F, SP
Prerequisite: Senior standing; and ASCI 363 or ASCI 3363.

Critical evaluation and formal presentation of current issues facing animals in managed systems. Evaluation of current trends and emerging issues, analysis of supporting evidence and logic, and synthesis and formal presentation of the resulting perspectives on different approaches to current challenges. Course may be offered in classroom-based or online format. 2 lectures. Formerly ASCI 479.

ASCI 4484 Poultry Meat and Egg Production and Processing (4 units)
Term Typically Offered: SP
Prerequisite: ASCI 211, ASCI 2210, or ASCI 2231.

Modern production techniques for the poultry meat industry. Management of hatcheries, poultry production, and poultry meat processing. 3 lectures, 1 laboratory. Formerly ASCI 330.

ASCI 5500 Individual Study in Animal Science (1-4 units)
Term Typically Offered: F, SP
Prerequisite: Consent of department head.

Advanced independent study planned and completed under the direction of a member of the Animal Science faculty. Repeatable up to 4 units. Formerly ASCI 500.

ASCI 5520 Comparative Animal Nutrition (3 units)
Term Typically Offered: TBD
Prerequisite: Graduate or senior standing.

Advanced problem-based presentation of animal nutrition cases. Emphasis on nutrients, clinical disorders and species not commonly considered in production animal nutrition. Analytical and problem-solving skills applied to resolve complex nutrition management issues. Field trip required. 2 lectures, 1 activity. Formerly ASCI 520.

ASCI 5528 Principles of Stem Cell Biology (2 units)
Term Typically Offered: F
Prerequisite: Graduate standing in Agriculture, Biological Sciences, or Biomedical Engineering. Recommended: One of the following: ASCI 406, ASCI 4406, BIO 452, or BIO 4452.

Principles of stem cell biology including characteristics, types, developmental roles, therapeutic uses, historical perspectives, and introduction to ethical issues. Emphasis on primary literature and student presentations. 2 seminars. Crosslisted as ASCI/BIO 5528. Formerly BIO 534.

ASCI 5570 Special Advanced Topics (1-3 units)
Term Typically Offered: TBD
Prerequisite: Graduate standing and consent of instructor.

Directed group study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 9 units. 1 to 3 seminars. Formerly ASCI 570.

ASCI 5571 Special Advanced Laboratory (1-3 units)
Term Typically Offered: TBD
Prerequisite: Graduate standing and consent of instructor.

Directed group laboratory study of special topics for advanced students. The Class Schedule will list topic selected. Repeatable up to 6 units. 1 to 3 laboratories. Formerly ASCI 571.

ASCI 5581 Graduate Seminar in Animal Science (1 unit)
Term Typically Offered: F
CR/NC
Prerequisite: Graduate standing.

Current topics and research problems in Animal Science and their application to the industry. Repeatable up to 4 units. Credit/No Credit grading only. 1 seminar. Formerly ASCI 581.

ASCI 5583 Research and Professional Development for Regenerative Medicine Students (2 units)
Term Typically Offered: SP
Prerequisite: Graduate standing in the Specialization in Regenerative Medicine for the MS in Biological Sciences; or Specialization in Regenerative Medicine for the MS in Biomedical Engineering; or the Animal Science Specialization for the MS in Agriculture.

Independent research experience and professional development in biological or biomedical research. Proposal writing and literature review, experimental design, implementation and troubleshooting, data visualization and analysis, oral and poster presentations, and workplace issues. 1 seminar and supervised work. Crosslisted as ASCI/BIO/BMED 5583. Formerly ASCI/BIO/BMED 583.

ASCI 5598 Project (1-3 units)
Term Typically Offered: F, SP, SU
Prerequisite: Graduate standing and consent of instructor.

Individual or group, research or design experience, with faculty approval and guidance, generally with additional guidance from external project sponsor. Deliverables include a report and presentation that satisfy the culminating experience for a master's degree. Repeatable up to 6 units. Crosslisted as ASCI/BIO/BMED 5598. Formerly ASCI/BIO/BMED 593.