ASCII–ANIMAL SCIENCE

ASCII 101 Introduction to the Animal Sciences (2) (CR/NC)
Economic, environmental and societal impact of the livestock, poultry and horse industries. Basic terminology, anatomy, and physical requirements of animals. Career and academic planning. Co-curricular, extra-curricular, and postgraduate opportunities. Required of all first-time students in the Animal Science Department. Credit/No Credit grading only. 2 lectures.

ASCII 112 Principles of Animal Science (4) GE B2
Economic and environmental roles of animal production and companionship to society. Introductory nutrition, genetics, reproduction, behavior, growth and development, animal products, biosecurity, and food processing and safety of animals. 4 lectures. Fullfills GE B2 except for ASCII and AGSC majors.

ASCII 200 Special Problems for Undergraduates (2–3) (CR/NC)
Individual investigation, research, studies, or surveys of selected problems. Total credit limited to 4 units, with a maximum of 3 units per quarter. Credit/No Credit grading only. Prerequisite: Consent of instructor.

ASCII 203 Animal Parasitology (3)
Identification, life cycles, prevention and control of the common external and internal parasites causing economic loss in livestock. 3 lectures. Prerequisite: BIO 111 or BIO 161. Crosslisted as ASCI/VS 203.

ASCII 211 Meat Science (4)
Muscle food processing methods and operations. Conversion of muscle to meat. Meat inspection, grading, composition, curing, preservation, food safety and related topics. Carcass beef, pork, and lamb processed into consumer ready products. 3 lectures, 1 laboratory.

ASCII 212 Livestock Show Management (3)
Application of the management and organization of Cal Poly’s Western Bonanza Livestock Show. Principles and procedures in planning, organizing, financing, promoting and managing a major livestock show and the fair industry. Total credit limited to 6 units. 1 lecture, 2 activities. Not open to students with credit for ASCII 412 or ASCII 413.

ASCII 214 Equine Management (2)
Application of safety, risk reduction, horsemanship skills. Develop a working equine/human relationship. Selection and application of nutrition, equipment, preventive health and farrier program, and equitation skills. 2 laboratories. Prerequisite: Consent of instructor.

ASCII 216 Meat Grading and Evaluation (2)
Factors related to carcass quality and yield. USDA meat grading principles and practices. Judging of carcass and wholesale cuts. Field trip to meat packing plants required. 1 lecture, 1 laboratory. Prerequisite: ASCII 211.

ASCII 220 Introductory Animal Nutrition and Feeding (4)
Nutrient digestion and absorption; basic functions of major nutrient classes; NRC feed classification and feedstuff characteristics; Van Soest system of fiber analysis and practical applications; feed processing; effects on feeds and nutrient availability; nutrient requirements of animals; diet formulation techniques. 3 lectures, 1 laboratory. Prerequisite: ASCII 112.

ASCII 221 Introduction to Beef Production (4)
Survey of industry characteristics, breeds, market classes, production systems, and current issues facing the beef industry. 3 lectures, 1 laboratory. Prerequisite: ASCII 112 or ASCII 222. Change effective Winter 2011.

ASCII 222 Systems of Swine Production (4)
Structure of the pork industry in the U.S.; production standards and new technologies; breed systems. Market classification, product quality and quality assurance. Swine behavior and husbandry systems; biosecurity, health and feeding systems and management. 3 lectures, 1 laboratory. Prerequisite: ASCII 112 or ASCII 221. Change effective Winter 2011.

ASCII 223 Systems of Sheep Management (4)
Sheep industry overview, populations, trends, cultural implications, breed identification, nutritional, reproductive, health, and marketing management of sheep. 3 lectures, 1 laboratory. Prerequisite: ASCII 112 or ASCII 221. Change effective Winter 2011.

ASCII 224 Equine Science (4)
History, status of the horse industry, breeds. Application of management skills, safety, conformation evaluation, hoof and leg conformation and care. Understanding equine behavior. Insurance and tax ramifications. Pedigree analysis. Alternare therapies. 3 lectures, 1 laboratory. Prerequisite: ASCII 112.

ASCII 225 Introduction to Poultry Management (4)
Introduction to modern techniques in poultry production, processing, marketing and price discovery. Consumption trends, breeds and consumer grades. Laboratory application of management skills, health care, keeping of production and accounting records and processing techniques. 3 lectures, 1 laboratory. Crosslisted as ASCI/PM 225.

ASCII 226 Livestock Evaluation (3)
Utilization of objective and subjective estimation measures in establishing economic worth of domestic animals of the three meat animal species and horses. 1 lecture, 2 laboratories.

ASCII 227 Companion Animal Science (4)
Companion animal anatomy and physiology, reproduction, nutrition, behavior, management, common parasites, and infectious diseases. Scientific method in studying the human-animal bond. Application of biological concepts to problems related to companion animals. Trends in pet industry including animal welfare issues. 3 lectures, 1 laboratory. Prerequisite: ASCII 112.

ASCII 228 Equine Evaluation (2)
Appraisal of equine breeds at halter and in performance classes. Evaluate horse classes, decide their order of placement, and then orally justify these decisions to a judge. The relationship of equine anatomy and physiology on competitive performance. 2 laboratories.

ASCII 229 Anatomy and Physiology of Farm Animals (4)
Comprehensive overview of the principal systems of farm animals using an integrative, systemic approach to learning the homeostasis of mammalian organisms so the information can be applied to their daily care and management. 3 lectures, 1 laboratory. Prerequisite: BIO 111 or BIO 161. Crosslisted as ASCI/VS 229.

ASCII 231 General Animal Science (3)
Relationship of animal agriculture to society and the economy and their role for human use and consumption. Discussion of nutrition, reproduction and management of beef cattle, sheep, swine and horses. Credit not allowed for Animal Science majors. 3 lectures.

ASCII 232 General Animal Science Laboratory (1)
Basic handling skills of livestock; introductory selection of livestock; basic feedstuff identification and processing; and health care practices. 1 laboratory.

ASCII 260 Preparation of Livestock for Shows and Sales (3)
Techniques, equipment and knowledge necessary in order to properly condition, groom, and present beef cattle or horses for evaluation and merchandising. 3 activities.

ASCII 265 Equine Behavior and Training (3)
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, farrier and health care. 3 activities.

ASCII 270 Selected Topics (1–4)
Directed group study of selected topics. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures. Prerequisite: Open to undergraduate students and consent of instructor.

ASCII 290 Animal Production and Management Enterprise (1-5) (CR/NC)
Beginning field experience in animal production systems. May include nutrition, reproduction, management, processing, marketing, and/or marketing exercises. Total degree credit for ASCII 290/ASCI 490 limited to 6 units. Credit/No Credit grading only. 1-5 lectures. Prerequisite: Consent of instructor. Crosslisted as ASCI/PM 290.

ASCII 304 Animal Genomics (3)
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. 3 lectures. Prerequisite: BIO 302 or BIO 303 or BIO 351.

ASCII 305 Game Bird Propagation and Management (3)
Habitat needs, management and propagation of North American game bird species in the wild and in captivity. Reproduction, nutrition and maintenance of
ACSI 300 Technical Veterinary Skills (4)
Restraint and handling of animals, physical examination, necropsy procedure, basic wound management, applied pharmacology. Reproduction and herd health programs. 3 lectures, 1 laboratory. Prerequisite: VS/ASCI 229. Crosslisted as ACSI/PM 305.

ACSI 311 Advanced Beef Cattle System Management (4)
Management principles for the sustainability of commercial beef cattle operations. Systems approach for goal setting, financial analysis, range management, breeding systems, nutrition, health programs, marketing, and production practices to enhance profitability of commercial cow-calf operations. 3 lectures, 1 laboratory. Prerequisite: ACSI 221 or consent of instructor.

ACSI 312 Production Medicine (3)
Basic disease concepts. Fundamentals of immunology and therapeutics. Disease prevention principles, infectious and non-infectious. Pre-harvest food safety and milk and meat quality assurance. Herd health management programs for production efficiency and product quality. 3 lectures. Prerequisite: ACSI 221 or ACSI 223; PM/ASCI 225 or ACSI 222; ACSI 224 or ACSI 227; and VS/ASCI 229. Crosslisted as ACSI/VS 312.

ACSI 315 Equine Biomechanics (4)
Anatomy and physiology of the equine hoof and limb. An understanding of the art and science of the farrier's work. Evaluation of proper hoof care, trimming, and shoeing. Foot and leg conformation as it relates to sound locomotion. 3 lectures, 1 activity. Prerequisite: ACSI 224 or equivalent. Recommended: VS/ASCI 229.

ACSI 320 Physiological Chemistry of Animals (4)
Equine reproduction, teasing, embryo transfer, ultrasound pregnancy diagnosis, new developments in breeding technology. 4 lectures, 1 laboratory. Prerequisite: ACSI 224 and VS/ASCI 229.

ACSI 324 Advanced Equine Evaluation (2)
Advanced principles of equine behavior modification for training young horses under saddle. Identifying differences in individual horse's attitudes, techniques to teach horses to respond to different stimuli, management of young equine athlete. 5 activities. Prerequisite: ACSI 344 and consent of instructor. Change effective Winter 2011.

ACSI 325 Advanced Livestock Evaluation (2)
Appraising the relative merit of individual horses in halter and performance through the application, development and refinement of deductive and inductive logical processes. Oral and written expression of the selection rationale. 2 laboratories. Prerequisite: ACSI 228 or consent of instructor.

ACSI 326 Advanced Livestock Evaluation (2)
Application of deductive and inductive logical processes in appraising the relative merit of individual animals within a group sample. Oral expression of the selection rationale. 2 laboratories. Prerequisite: ACSI 226.

ACSI 329 Principles of Range Management (4)
Characteristics, history and multiple uses of rangeland. Principles of range plant physiology and ecology in relation to range condition, trend, utilization and improvement practices. Principles of proper grazing practices and nutrition of livestock. 3 lectures, 1 laboratory. Prerequisite: One course each in soil science, animal science and botany or crop science. Change effective Winter 2011.

ACSI 330 Poultry Meat Production and Processing (4)
Modern production techniques for the poultry meat industry. Management of hatcheries, broiler and/or turkey meat production, processing and further processing. 3 lectures, 1 laboratory. Prerequisite: ACSI/PM 225. Crosslisted as ACSI/PM 330.

ACSI 333 Equine Reproduction (5)
Management of the breeding farm, breeding problems, diseases, study of estrus cycles, servicing the mare, handling stallions. Breeding systems, teasing, embryo transfer, ultrasound pregnancy diagnosis, new developments in breeding technology. 4 lectures, 1 laboratory. Prerequisite: ACSI 224 and VS/ASCI 229.

ACSI 339 Internship in Animal Science (1–12) (CR/NC)
Selected Animal Science students will spend up to 12 weeks with an approved agricultural firm engaged in production or related business. Time will be spent applying and developing production and managerial skills and abilities. One unit of credit may be allowed for each full week of completed and reported internship. Degree credit limited to 6 units. Credit/No Credit grading only. Prerequisite: Consent of internship instructor.

ACSI 342 Poultry Business Management (4)
Organization and management of vertically integrated poultry operations. Personnel management, cash flow analysis, cash vs. accrual accounting, structuring of financial statements, projecting product outputs and cash flow needs, employee benefit programs and insurance needs for poultry companies. 4 lectures. Prerequisite: ACSI/PM 225 or consent of instructor. Crosslisted as ACSI/PM 342. Change effective Winter 2011.

ACSI 344 Equine and Human Communication (3)
Behavior of the horse and its relationship with people. Learning, motivation, social behavior and communication with techniques to improve the safety and understanding between people and horses. 3 activities. Prerequisites: ACSI 214, or consent of instructor. Change effective Winter 2011.

ACSI 345 Equine Behavior Modification (5)
Advanced principles of equine behavior modification for training young horses under saddle. Identifying differences in individual horse's attitudes, techniques to teach horses to respond to different stimuli, management of young equine athlete. 5 activities. Prerequisite: ACSI 344 and consent of instructor. Change effective Winter 2011.

ACSI 346 Equine Nutrition (4)
Equine digestion, diet development considerations and evaluations, nutritional management, and the relationship of respective topics to recommended feeding practices, research data, and nutritional portfolios. Information is based on recent advances in horse nutrition and the National Research Council's Nutrient Requirements for Horses. 3 lectures, 1 laboratory. Prerequisite: ACSI 220 and ACSI 224.

ACSI 347 Equine Exercise Physiology (3)

ACSI 350 Applied Nonruminant Nutrition (4)
Comparison of nonruminant and ruminant digestive systems, nutrient requirements, risk management for ingredients, formulation and nutritional management. Influence of growth and production curves, consumption patterns, and feeding management in commercial poultry and swine industries. Feed manufacturing and governmental regulations. 3 lectures, 1 laboratory. Prerequisite: ACSI 220 or ACSI 140. Change effective Winter 2011.

ACSI 351 Reproductive Physiology (4)
Reproductive anatomy of male and female farm animals. General endocrinology and systemic physiology. Endocrine system effects on the various aspects of reproduction, such as: gametogenesis, estrus, gestation, parturition, mothering and seasonality. Introduction to reproductibe biotechnology and embryo manipulation. 3 lectures, 1 laboratory. Prerequisite: VS/ASCI 229.

ACSI 355 Ruminant Nutrition (4)

ACSI 360 Poultry Industry Seminar (3)
New trends, management techniques and governmental regulations, special problems and research developments related to the poultry industry. 3 seminars. Prerequisite: PM/ASCI 225, PM/ASCI 330 and VS/ASCI 440. Crosslisted as ACSI/PM 360.

ACSI 363 Undergraduate Seminar (2)
Major developments in the chosen field of the student. Discussion of new developments, policies, practices, and procedures. Each individual is responsible for the development and presentation of a topic in the chosen field, résumé, and cover letter. 2 seminars. Prerequisite: Junior Senior-standing and ACSI 462. Change effective Winter 2011.
ASCI 366 Veterinary Pharmacology (4) Investigation of pharmacological principles applied to animal systems. Overview of drugs acting on the nervous, endocrine, circulatory, urinary systems, and reproductive systems, specialty areas of pharmacology, and pharmacogenomics of livestock and companion animals. 3 lectures, 1 activity. Prerequisite: ASCI/VS 229 and CHEM 111 or CHEM 127, and ASCI/VS 229. Change effective Winter 2011.

ASCI 384 Processed Meat Products (4) Physical, chemical and functional characteristics of meat food raw materials. Science and technology of value-added processing including curing, sausage manufacture, low moisture products, and restructuring. Quality assurance and related current industry topics. 3 lectures, 1 laboratory. Prerequisite: ASCI 211 and junior standing.

ASCI 400 Special Problems for Advanced Undergraduates (2–4) (CR/NC) Individual investigation, research, studies, or surveys of selected problems. Total credit limited to 4 units, with a maximum of 4 units per quarter. Credit/No Credit grading only. Prerequisite: consent of instructor.

ASCI 403 Applied Biotechnology in Animal Science (5) 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. 3 lectures, 2 laboratories. Prerequisite: BIO 161, BIO 162, and BIO 302 or BIO 303 or BIO 351 or ASCI 304, or equivalent. Crosslisted as ASCI/VS 403. Change effective Winter 2011.

ASCI 405 Domestic Livestock Endocrinology (4) Endocrine system and its role in the homeostasis of the animal. Use of hormones in increasing productivity of domestic animals. Endocrinology of reproduction, growth, metabolism and immunology. Discussions of cost-benefit relationships in the use of hormones. 4 lectures. Prerequisite: VS/ASCI 229.

ASCI 406 Applied Animal Embryology (5) Technology of promoting oocyte development, fertilization, culturing, cryopreservation and micromanipulation of embryos. Mouse, cattle and horse embryos used for learning the techniques involved in embryology. 3 lectures, 2 laboratories. Prerequisite: VS/ASCI 229 and ASCI 351.

ASCI 410 Applied Animal Behavior Science (4) 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. 3 lectures, 1 laboratory. Prerequisite: ASCI 320, or CHEM 313 or CHEM 371, and ASCI 221, or ASCI 222, or ASCI 223, or ASCI 224, or ASCI 225, or ASCI 227.

ASCI 412 Advanced Livestock Event Planning (3) Organization and planning for the Western Bonanza Junior Livestock Show. Establishment of committee assignments and show manager responsibilities. Corporate partnerships established and fund raising begun. Planning for activities and guest speakers and new student recruitment. Total credit limited to 6 units. 1 lecture, 2 activities. Prerequisite: ASCI 212, AGB 314 and consent of instructor.

ASCI 413 Advanced Livestock Event Management (1) Student management of the Western Bonanza Junior Livestock Show. Leadership skills, team building, media relations, use of computer applications, livestock and fair industry contacts and mentoring to new students. Application of knowledge learned in ASCI 412. Total credit limited to 2 units. 1 activity. Prerequisite: ASCI 412 and consent of instructor.

ASCI 415 HACCP for Meat and Poultry Operations (3) 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 and process overviews. 3 lectures. Prerequisite: ASCI 211 or consent of instructor.

ASCI 420 Animal Metabolism and Nutrition (3) Metabolism of proteins, carbohydrates, lipids, minerals, vitamins and water, and the relationship of nutrient utilization to animal production. 3 lectures. Prerequisite: ASCI 220; ASCI 320 or CHEM 313 or CHEM 371.

ASCI 425 Meat Industry Study Tour (2) 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. 2 activities. Prerequisite: ASCI 211 or consent of instructor.

ASCI 430 Animal Feed Processing (4) Management of feed manufacturing for poultry/swine, dairy/beef, and companion animals. General operation of a processing facility including process flow, raw materials receiving, particle reduction, mixing, pelleting, packaging and delivery. State and federal regulations. 3 lectures, 1 laboratory. Prerequisite: ASCI 112 or consent of instructor.

ASCI 438 Systemic Animal Physiology (4) Homeostatic relationships of organ systems. Cardiovascular, respiratory, urogenital and neuro-endocrinological functions. 3 lectures, 1 laboratory. Prerequisite: VS/ASCI 229, CHEM 313 or CHEM 371, or ASCI 320. Crosslisted as ASCI/VS 438.

ASCI 440 Immunology and Diseases of Animals (4) Introduction to immune system, including innate and acquired immunity of domesticated animals. Application of immunological analyses and examination of current disease issues in domesticated animals. 3 lectures, 1 laboratory. Prerequisite: VS/ASCI 229. Recommended: ASCI 320, CHEM 371 or equivalent. Crosslisted as ASCI/VS 440.

ASCI 450 Computer Applications in Animal Science: Spreadsheet Analysis (4) Development of spreadsheets relating to livestock production. Integration of database and analytical techniques. Cost-benefit analyses of livestock production systems. 2 lectures, 2 activities. Prerequisite: CSC 110.

ASCI 455 Advanced Equine Reproductive Technologies (4) Assisted reproductive technologies in horses; use of gametes from normal and sub-fertile horses; manipulation of sub-fertile horses, donor and recipient mares; manipulation of endocrine system; embryo utilization; cryobiology of gametes and embryos; assessment of high-risk mare, fetus, and neonate. 3 lectures, 1 laboratory. Prerequisite: ASCI 333; ASCI 351; ASCI 405 and ASCI 406 recommended.

ASCI 461 Senior Project Planning (1) (CR/NC) Evaluation of project options and expectations. Selection of a project and an appropriate advisor. Primary objective: completion of a senior project proposal and outline signed by the senior project advisor, detailing the scope of the project, resources required, and timeline for completion. Credit/No Credit grading only. 1 seminar. Prerequisite: Junior standing.

ASCI 462 Senior Project (2) Selection and completion of a project under faculty supervision. Projects typical of problems which graduates must solve in their fields of employment. Project results are presented in a formal report. Minimum 60 hours. Prerequisite: ASCI 461.

ASCI 463 Undergraduate Seminar (2) See ASCI 363

ASCI 465 Advanced Equine Reproductive Technologies (4) Assisted reproductive technologies in horses; use of gametes from normal and sub-fertile horses; manipulation of sub-fertile horses, donor and recipient mares; manipulation of endocrine system; embryo utilization; cryobiology of gametes and embryos; assessment of high-risk mare, fetus, and neonate. 3 lectures, 1 laboratory. Prerequisite: ASCI 333; ASCI 351; ASCI 405 and ASCI 406 recommended.

ASCI 466 Senior Project Planning (1) (CR/NC) Evaluation of project options and expectations. Selection of a project and an appropriate advisor. Primary objective: completion of a senior project proposal and outline signed by the senior project advisor, detailing the scope of the project, resources required, and timeline for completion. Credit/No Credit grading only. 1 seminar. Prerequisite: Junior standing.

ASCI 470 Selected Advanced Topics (1–4) Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures. Prerequisite: Consent of instructor.

ASCI 471 Selected Advanced Laboratory (1–4) Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 laboratories. Prerequisite: Consent of instructor.

ASCI 476 Issues in Animal Agriculture (3) Exploration of social, political and environmental forces which will affect livestock production in the future. Roles played by advocacy groups and the media in influencing consumer demands and management practices. 3 seminars. Prerequisite: Upper division standing.

ASCI 477 Senior Project – Research Experience in Animal Science (3) Independent research experience in a specific area of animal science conducted under faculty supervision. Satisfies senior project requirement. Minimum 90 hours required. Prerequisite: Senior standing, ASCI 363 and consent of instructor; one course in statistics recommended. New course, effective Winter 2011.

2009–2011 Cal Poly Catalog
ASCI 478  Senior Project – Advanced Internship Experience in Animal Science (3)
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. Minimum 90 hours required. Prerequisite: ASCI 363 and senior standing. New course, effective Winter 2011.

ASCI 480  Advanced Integration of Livestock and Meat Production (4)
Integration of domestic livestock systems and meat production. Advanced concepts in science and technology of animal management, growth enhancement, harvest and processing related to product safety and quality. 3 lectures, 1 laboratory. Prerequisite: ASCI 211 and ASCI 221; or equivalent course.

ASCI 490  Advanced Animal Production and Management Enterprise (1-5) (CR/NC)
Advanced field experience in animal production systems. May include health, nutrition, reproduction, management, processing, budgeting, and/or marketing exercises as well as management decision-making opportunities. Total degree credit for ASCI 290/ASCI 490 limited to 6 units. Credit/No Credit grading only. 1-5 lectures. Prerequisite: Consent of instructor. Crosslisted as ASCI/PM 490.

ASCI 500  Individual Study in Animal Science (1–6)
Advanced independent study planned and completed under the direction of a member of the Animal Science faculty. Total credit limited to 6 units. Prerequisite: Consent of department head, graduate advisor and supervising faculty member.

ASCI 503  Advanced Molecular Techniques in Animal Science (4)
Advanced molecular laboratory techniques in animal science. Topics include analyses of cellular and metabolic regulation, gene expression, gene activation and regulation, gene construct design, transgenesis, knockout animal models. 2 lectures, 2 laboratories. Prerequisite: ASCI 403 or equivalent course.

ASCI 520  Comparative Animal Nutrition (4)
Advanced problem-based presentation of animal nutrition case studies. Emphasis on nutrients, clinical nutrition disorders and species not commonly considered in production animal nutrition. Analytical and problem-solving skills will be utilized to develop solutions to complex animal nutrition management issues. 3 lectures, 1 activity. Prerequisite: ASCI 320, or CHEM 313 or CHEM 371, and one of the following: ASCI 346, or ASCI 350, or ASCI 355, or DSCI 301, or consent of instructor.

ASCI 530  Advanced Molecular Nutrition (3)
In-depth analysis of molecular signaling mechanisms and events related to nutrient metabolism using examples from the current literature in animal science and nutrition. 3 lectures. Prerequisite: ASCI 320 or ASCI 420 or CHEM 372 or graduate standing and consent of instructor.

ASCI 540  Advanced Immunology and Diseases of Animals (4)
In-depth analysis of the immune system, including molecular basis for immunity of domesticated animals. Application of immunological assays, and application of scientific method to examine immunity and disease in domesticated animals. Not open to students with credit in VS 440. 3 lectures, 1 laboratory. Prerequisite: VS/ASCI 229; ASCI 320 or CHEM 371 or equivalent; STAT 218 or equivalent; or consent of instructor. Corequisite: VS/ASCI 541. Crosslisted as ASCI/VS 540.

ASCI 541  Advanced Animal Immunology Laboratory (1)
Laboratory complement to VS 540. Independent research projects, including hypothesis development, experimental design, data collection and analyses, and written and oral presentations. 1 laboratory. Corequisite: VS/ASCI 540. Crosslisted as ASCI/VS 541.

ASCI 555  Advanced Equine Reproductive Technologies (4)
Assisted reproductive technologies in horses; use of gametes from normal and sub-fertile horses; manipulation of sub-fertile horses, donor and recipient mares; manipulation of endocrine system; embryo utilization; cryobiology of gametes and embryos; assessment of high-risk mare, fetus, and neonate. 3 lectures, 1 laboratory. Prerequisite: ASCI 333; ASCI 351; ASCI 405 and ASCI 406 recommended. Not open to students with credit in ASCI 455.

ASCI 570  Selected Topics in Animal Science (1–4)
Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 12 units. 1 to 4 seminars. Prerequisite: Graduate standing or consent of instructor.

ASCI 571  Selected Advanced Laboratory (1–4)
Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1-4 laboratories. Prerequisite: Graduate standing or consent of instructor.

ASCI 581  Graduate Seminar in Animal Science (1–4) (CR/NC)
Current findings and research problems in the field and their application to the industry. Credit/No Credit grading only. Total credit limited to 12 units. 1-4 seminars. Prerequisite: Graduate standing and consent of instructor.