

# ANIMAL SCIENCE (ANSC)

See Course Description Symbols and Terms (<https://catalog.csuchico.edu/academic-standards-policies/course-description-symbols-terms/>) for an explanation of course description terminology and symbols, the course numbering system, and course credit units.

## ANSC 100 Introduction to Food Animal Systems 3 Units

**Typically Offered:** Fall and spring

An overview of the foundations of the animal science industry, this course explores the basic terminology and food animal species that are produced in the United States. Students have the opportunity to explore how food is produced from livestock and to review scientific literature regarding best production practices. 3 hours lecture. (022552)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 3 units

**Course Attributes:** Lower Division

## ANSC 101 Introduction to Animal Science 3 Units

**Typically Offered:** Fall and spring

An overview, using a scientific perspective, of farm animals. Highlights anatomy and physiology of farm animals, reproduction, nutrition, animal health, animal products, animal behavior, and pertinent social issues, such as animal rights. Includes human opportunity to influence trait inheritance, population densities, and productivity. 3 hours laboratory, 2 hours lecture. (000419)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 3 units

**Course Attributes:** Lower Division

## ANSC 110 Directed Work Experience in Animal Sciences 2 Units

**Typically Offered:** Fall and spring

Directed work experience in the management of beef, dairy, meats, sheep, and swine enterprises at the University Farm, with three weeks at each enterprise. Weekly conferences on student projects and individual and group problems. 3 hours laboratory, 1 hour lecture. (000424)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 4 units

**Course Attributes:** Lower Division

## ANSC 120 Livestock Skills 3 Units

**Typically Offered:** Spring only even years

An introduction to selection, nutrition, health, and management of beef, sheep, swine, and dairy for livestock youth programs, including ethical practices associated with livestock exhibition. This class is designed primarily for students pursuing a career in agricultural education. 3 hours laboratory, 2 hours lecture. (000446)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 3 units

**Course Attributes:** Lower Division

## ANSC 160 Veterinary Practices 2 Units

**Typically Offered:** Fall and spring

Designed to allow the student to become familiar with various vaccines, equipment, and restraining techniques used in routine treatment of farm animals. Selection of proper materials, veterinary nomenclature, actual handling and treatment of farm animals involved. 3 hours laboratory, 1 hour lecture. (000436)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 2 units

**Course Attributes:** Lower Division

## ANSC 198 Special Topics 1-3 Units

**Typically Offered:** Fall and spring

This course is for special topics offered for 1.0-3.0 units. Typically the topic is offered on a one-time-only basis and may vary from term to term. See the Class Schedule for the specific topic being offered. 3 hours lecture. (000454)

**Grade Basis:** Graded

**Repeatability:** You may take this course more than once

**Course Attributes:** Lower Division

## ANSC 199 Special Problems 1-3 Units

**Prerequisite:** Faculty permission.

**Typically Offered:** Fall and spring

This course is an independent study of a topic or problem. Students must register with a supervising faculty member. A maximum of 6 units of special problems may be applied toward a bachelor's degree in agriculture. 0 hours supervision. (022140)

**Grade Basis:** Credit/No Credit

**Repeatability:** You may take this course for a maximum of 6 units

**Course Attributes:** Lower Division

## ANSC 220 Introduction to Livestock Evaluation 3 Units

**Prerequisite:** ANSC 101.

**Typically Offered:** Spring only

This course provides students a fundamental understanding of how to evaluate market and breeding beef, sheep, goats, and swine utilizing both visual appraisal as well as objective performance records. Students are given a framework to make decisions with an objective approach to select animals based on certain criteria and standards. Students who demonstrate proficiency in understanding selection at its most basic level, as well as demonstrate effectiveness in oral reasons have an opportunity to participate on the Intercollegiate Livestock Judging Team at CSU, Chico. 2 hours activity, 2 hours seminar. (022077)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 3 units

**Course Attributes:** Lower Division

## ANSC 230 Animal Feeds and Nutrition 3 Units

**Typically Offered:** Fall and spring

An introduction to the nutrition of domestic and wild animals with emphasis on appropriate nutrition for various activities. A survey of the integration of feed production and animal production systems. Computer formulation and analysis of diets to achieve desired performance levels of animals. 2 hours activity, 2 hours lecture. (000434)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 3 units

**Course Attributes:** Lower Division

## ANSC 250 Live Animal and Carcass Evaluation 3 Units

**Typically Offered:** Spring only

Evaluation of market livestock as related to growth and development, production efficiency, carcass merit, selection of breeding animals based on performance, production records and visual appraisal. Specific reference to factors determining carcass value. 2 hours activity, 2 hours seminar. (000445)

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 3 units

**Course Attributes:** Lower Division

- ANSC 271 Principles of Beef Cattle Production** **3 Units**  
**Typically Offered:** Fall only  
 An overview of the United States beef industry including an introduction to the segments of the beef production chain and the scope of the industry. The majority of the course focuses on basic principles including genetics and breeding, nutrition, reproduction, herd health, carcass evaluation and marketing. 3 hours lecture. (020992)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Lower Division
- ANSC 274 Principles of Dairy Production** **3 Units**  
**Typically Offered:** Fall only  
 An overview of the United States dairy industry, emphasizing the life cycle of the dairy cow. Topics include calf raising, heifer development, dry cow management, and lactation management. Within each stage of production, discussion may include health, nutrition, reproduction, and genetics. Additionally, facilities management and cow comfort are introduced. 3 hours lecture. (021029)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Lower Division
- ANSC 276 Principles of Meat Science** **3 Units**  
**Typically Offered:** Spring only  
 Principles of Meat Science in an introductory course in meat science organized to increase student knowledge of muscle foods-their properties, value, and appropriate handling procedures. Current meat processing technologies are presented and pertinent aspects of the meat industry are also discussed. 3 hours lecture. (021772)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Lower Division
- ANSC 294 Principles of Rangeland Livestock Management** **3 Units**  
**Typically Offered:** Spring only  
 Students examine the ecological principles that cause rangelands, including grasslands, shrublands, woodlands, and deserts, to change or stay the same. How humans use livestock to manage these ecosystems is explored. 3 hours lecture. (022025)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Lower Division
- ANSC 298 Special Topics** **1-3 Units**  
**Typically Offered:** Inquire at department  
 This course is for special topics offered for 1.0 - 3.0 units. Typically the topic is offered on a one-time-only basis and may vary from semester to semester and be different for different sections. See the class schedule for the specific topic being offered. 3 hours seminar. (020968)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course more than once  
**Course Attributes:** Lower Division
- ANSC 299 Special Problems** **1-3 Units**  
**Prerequisite:** Faculty permission.  
**Typically Offered:** Fall and spring  
 This course is an independent study of a topic or problem and is offered for 1.0-3.0 units. Students must register with a supervising faculty member. A maximum of 6 units of special problems may be applied toward a bachelor's degree in agriculture. 9 hours supervision. (020959)  
**Grade Basis:** Credit/No Credit  
**Repeatability:** You may take this course for a maximum of 6 units  
**Course Attributes:** Lower Division
- ANSC 301 Intermediate Animal Systems** **3 Units**  
**Prerequisite:** ANSC 101.  
**Typically Offered:** Fall only  
 An overview of world and United States animal production systems, emphasizing the scientific principles and management of large and small ruminants (beef, dairy, sheep, goats), monogastrics (swine, equine), as well as meat, poultry, and aquaculture. 2 hours laboratory, 2 hours lecture. (000455)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division
- ANSC 320 Advanced Livestock Selection and Carcass Evaluation** **3 Units**  
**Typically Offered:** Fall only  
 Develop skills in quality grading and yield grading animals both live and on the rail. Improve skills in selecting animals in pasture conditions and develop ability to explain decisions and be able to accurately describe their reasons. Numerous field trips to fairs and ranches will be required. 3 hours laboratory, 2 hours lecture. (000457)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 6 units  
**Course Attributes:** Upper Division
- ANSC 330 Animal Nutrition** **3 Units**  
**Prerequisite:** ANSC 101, ANSC 230.  
**Typically Offered:** Fall and spring  
 A study of the nutritive requirements of animals for maintenance, growth, lactation, reproduction and other bodily functions. Intermediary metabolism of nutrients, chemical and animal analysis of feedstuffs, design and implementation of nutrition studies and writing of a scientific paper. 3 hours lecture. (000465)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division
- ANSC 330L Applied Animal Nutrition Research** **1 Unit**  
**Prerequisite:** ANSC 101, ANSC 330 (may be taken concurrently).  
**Typically Offered:** Fall and spring  
 This course focuses on various laboratory and research techniques in the animal nutrition field. Students implement and conduct a course level research project, including sample preparation and analysis, and data collection and analysis. 3 hours laboratory. (022090)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 2 units  
**Course Attributes:** Upper Division
- ANSC 340 Reproductive Physiology of Domestic Animals** **3 Units**  
**Prerequisite:** ANSC 101.  
**Typically Offered:** Fall and spring  
 The physiological mechanisms of reproduction in domestic animal species. Principles of reproductive anatomy, gamete formation, endocrinology, cyclicity and parturition. The laboratory experience will emphasize theory learned in lecture and will include uses of reproductive technology to maximize reproductive efficiency and fertility. 3 hours lecture. (000467)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division

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| <p><b>ANSC 350 Meat and the Consumer</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Typically Offered:</b> Fall only<br/> Muscle growth and composition, nutritional and health concerns, meat safety and advances in product development, preparation and storage. 3 hours laboratory, 2 hours lecture. (000447)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p>  | <p><b>ANSC 374 Organic Dairy Production and Management</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Prerequisite:</b> ANSC 101.<br/> <b>Typically Offered:</b> Spring only<br/> This course covers all scientific aspects of organic dairy production including soil fertility, grazing management, pasture and forage quality, nutritional ration balancing on pasture, enhancing dry matter intake on pasture, holistic herd health (including homeopathy, acupuncture and herbal medicine), organic methods to improve milk quality, organic calf management strategies, and the organic certification process and how to develop your Organic System Plan. The course also covers many new topics of discussion for organic research and development. 3 hours laboratory, 2 hours lecture. (021420)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p>   |
| <p><b>ANSC 360 Animal Health and Disease</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Prerequisite:</b> ANSC 101.<br/> <b>Typically Offered:</b> Fall and spring<br/> A study of disease processes in livestock. Principles of disease organisms and the physiology of infection. Mechanisms in which the body combats infections, i.e., immune response. Herd health considerations for disease prevention and treatment. 3 hours lecture. (000466)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p>   | <p><b>ANSC 378 Poultry Meat and Eggs: Industry, Processing, and Products</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Prerequisite:</b> ANSC 101.<br/> <b>Typically Offered:</b> Fall and spring<br/> This course covers the scope and importance of the poultry industry with an introduction to the basics of poultry science and modern methods of producing, processing, and marketing of poultry and poultry products. General topics include egg anatomy, production and functionality, poultry slaughter, meat quality, and value-added poultry products. Focus is also given to the science and practice of processing and products of poultry and eggs; physical, chemical, microbiological, and functional characteristics of value-added poultry products as they affect consumer acceptance, efficiency of production, and regulatory approval. 3 hours lecture. (022586)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p> |
| <p><b>ANSC 370 Livestock and Companion Animal Behavior</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Prerequisite:</b> ANSC 101.<br/> <b>Typically Offered:</b> Fall only<br/> This course promotes an understanding of basic principles of livestock (i.e., food animals and horses) and companion animal (i.e., dogs and cats) behavior and its application of production, shelter, and household set ups. This course is structured to help students understand the role of animal behavior on welfare and/or productivity of livestock and companion species. This course has an emphasis on how livestock and companion animals communicate with their surroundings and how we can adjust their housing or management to address their needs in order to improve their well-being and/or productivity. 3 hours lecture. (022076)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p> | <p><b>ANSC 389 Internship in Animal Science</b> <span style="float: right;"><b>1-3 Units</b></span><br/> <b>Prerequisite:</b> Prior approval of academic goals by the Internship Coordinator.<br/> <b>Typically Offered:</b> Spring, summer, fall<br/> This course is an internship offered for 1.0-3.0 units. You must register directly with a supervising faculty member. Work experience with selected livestock operations is to be completed and supervised by faculty and staff of cooperating livestock ranch. 0 hours independent study. (000472)<br/> <b>Grade Basis:</b> Credit/No Credit<br/> <b>Repeatability:</b> You may take this course for a maximum of 15 units<br/> <b>Course Attributes:</b> Upper Division</p>  |
| <p><b>ANSC 372 Sheep Production</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Prerequisite:</b> ANSC 101 or equivalent.<br/> <b>Typically Offered:</b> Fall only<br/> A study of approved practices in commercial and purebred sheep production with emphasis on production costs, disease, nutrition, genetic selection, production records, niche marketing, and contributions of sheep to environmental sustainability. 3 hours laboratory, 2 hours lecture. (022454)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p>  | <p><b>ANSC 394 Livestock Grazing Ecology and Management</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Typically Offered:</b> Fall only<br/> This course examines how herbivores interact with their environment and how understanding of these interactions is applied to the management of grazing animals or the environments they inhabit or both. Emphasis is placed on the scientific basis for grazing management decisions and management designed to accomplish a variety of outcomes. 3 hours laboratory, 2 hours lecture. (022006)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p>   |
| <p><b>ANSC 373 Swine Production</b> <span style="float: right;"><b>3 Units</b></span><br/> <b>Prerequisite:</b> ANSC 101 or equivalent.<br/> <b>Typically Offered:</b> Spring only<br/> A study of approved practices in commercial and purebred swine production with emphasis on production costs, disease, reproduction, nutrition, genetic selection, production records and niche marketing. 3 hours laboratory, 2 hours lecture. (022455)<br/> <b>Grade Basis:</b> Graded<br/> <b>Repeatability:</b> You may take this course for a maximum of 3 units<br/> <b>Course Attributes:</b> Upper Division</p>   |   |

- ANSC 398 Special Topics** **1-3 Units**  
**Typically Offered:** Inquire at department  
 This course is for special topics offered for 1.0 - 3.0 units. Typically the topic is offered on a one-time-only basis and may vary from semester to semester and be different for different sections. See the class schedule for the specific topic being offered. 3 hours seminar. (000473)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course more than once  
**Course Attributes:** Upper Division
- ANSC 399 Special Problems** **1-3 Units**  
**Prerequisite:** Upper-division standing.  
**Typically Offered:** Fall and spring  
 This course is an independent study of a topic or problem and is offered for 1.0-3.0 units. Students must register with a supervising faculty member. Study/research in animal science under direct supervision of a faculty member. A maximum of 6 units may be applied toward a bachelor's degree in agriculture. 0 hours independent study. (000474)  
**Grade Basis:** Credit/No Credit  
**Repeatability:** You may take this course for a maximum of 6 units  
**Course Attributes:** Upper Division
- ANSC 440 Physiology of Domestic Animals** **3 Units**  
**Prerequisite:** ANSC 101, CHEM 107. Recommended: CHEM 108.  
**Typically Offered:** Fall and spring  
 Comparative study of the physiology of organ systems, with major emphasis on farm animals. 3 hours laboratory, 2 hours lecture. (000456)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division
- ANSC 450 Food Sanitation and Quality Control** **3 Units**  
**Prerequisite:** ANSC 101; CHEM 107 or CHEM 111.  
**Typically Offered:** Spring only  
 This course is intended for students involved in producing, selling, and handling food products who are interested in a course on principles of food sanitation and quality control from a management standpoint. 3 hours seminar. (000468)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division
- ANSC 470 Animal Welfare** **3 Units**  
**Prerequisite:** ANSC 360, ANSC 370 or faculty permission.  
**Typically Offered:** Spring only  
 This course provides an introduction to the scientific approaches for assessing animal welfare. For that, we discuss animal welfare metrics, data collection, and the type of questions that need to be asked for the state of an animal's welfare to be assessed. We also discuss ethical views and the role of different stakeholders in law and policy development. 3 hours lecture. (022276)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division
- ANSC 471 Advanced Beef Cattle Management and Production** **3 Units**  
**Prerequisite:** ANSC 101, ANSC 271 or faculty permission.  
**Typically Offered:** Spring only  
 Advanced instruction of world and United States beef production systems. Investigation of the segmentation of the beef industry, including seedstock, commercial cow-calf, stocker, feedlot, packer, retailer and consumer. Integrated beef production systems are evaluated based on consideration of genetics, nutrition, health, reproduction, product, forage management and marketing. 3 hours laboratory, 2 hours seminar. (000459)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division
- ANSC 474 Dairy Production and Management** **3 Units**  
**Prerequisite:** ANSC 101.  
**Typically Offered:** Spring only  
 A comprehensive study of large dairy management with emphasis placed on efficient reproduction and nutrition. Additional studies include evaluation of replacement heifer development scenarios, cow comfort, and record keeping systems. 3 hours laboratory, 2 hours lecture. (000463)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 3 units  
**Course Attributes:** Upper Division
- ANSC 489 Internship in Animal Science** **1-3 Units**  
**Typically Offered:** Fall and spring  
 3 hours lecture. (000480)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 15 units  
**Course Attributes:** Upper Division
- ANSC 498 Special Topics** **1-3 Units**  
**Prerequisite:** Department permission.  
**Typically Offered:** Fall and spring  
 This course is for special topics offered for 1.0-3.0 units. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See the Class Schedule for the specific topic being offered. 3 hours supervision. (000481)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course more than once  
**Course Attributes:** Upper Division
- ANSC 499 Special Problems** **1-3 Units**  
**Prerequisite:** Faculty permission.  
**Typically Offered:** Fall and spring  
 This course is an independent study of special problems offered for 1.0-3.0 units. You must register directly with a supervising faculty member. 0 hours independent study. (000482)  
**Grade Basis:** Credit/No Credit  
**Repeatability:** You may take this course for a maximum of 6 units  
**Course Attributes:** Upper Division
- ANSC 499H Honors Research in Animal Science** **6 Units**  
**Prerequisite:** Faculty permission.  
**Typically Offered:** Inquire at department  
 An intensive 6-unit, one-year course in agricultural research. See College office for details. Open only to students with at least a 3.0 GPA in the major. The course consists of a faculty-supervised research project, a thesis, and a public presentation. 18 hours independent study. (020208)  
**Grade Basis:** Graded  
**Repeatability:** You may take this course for a maximum of 6 units  
**Course Attributes:** Upper Division