

# Animal Science

## Overview

This program offers courses designed for students in the Agriculture Business, Veterinary Technology, and Equine Science programs.

## Program Maps

[Animal Science, Equine Science, A.S. Degree \(/crc/main/doc/programs/program-maps/an-sci-as-degree-ho.pdf\)](/crc/main/doc/programs/program-maps/an-sci-as-degree-ho.pdf)

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## Associate Degree

### A.S. in Equine Science

Equine Science is the study of the principles behind the biology, function, and management of the horse. This program prepares students to develop the skills and knowledge that will help them gain a strong and competitive position in the equine industry.

**Catalog Date:** June 1, 2021

## Degree Requirements

COURSE CODE	COURSE TITLE	UNITS
ANSC 300	Introduction to Animal Science	3
ANSC 301	Introduction to Equine Science	3
ANSC 302	Equine Reproduction	2
ANSC 303	Equine Business Management	3
ANSC 304	Livestock Feeding and Nutrition	3
ANSC 305	Equine Health	3
ANSC 306	Basic Equine Handling	1
ANSC 307	Farrier Science	3
AGB 310	Agriculture Computer Applications	3
AGB 320	Agriculture Accounting (3)	3
AGB 330	Agriculture Sales and Communication (3)	3
or AGB 331	Agriculture Marketing (3)	
ANSC 498	Work Experience in Animal Science	0.5 -4
<b>Total Units:</b>		<b>30.5 - 34</b>

*The Equine Science Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See CRC graduation requirements.*

## Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Describe the processes involved and outline major events in the evolution and domestication of the horse.
- Formulate a disease and parasite prevention program for equine.
- Describe career opportunities and requirements for successful employment in the equine industry.
- Relate basic genetic principles to techniques in breeding selection and mating programs.
- Identify anatomy and describe physiology of the male and female equine reproductive tract.
- List and explain the correct use of specialized insemination tools.
- Develop and maintain bookkeeping and record systems.
- Develop a ranch plan for an equine facility, incorporating legal requirements and regulations.
- Identify parts of the equine gastrointestinal system and describe the function of each.

- Implement a sound feeding program based on the type and amount of work performed.
- Assess the function and importance of each nutrient as it pertains to equine nutrition.
- Demonstrate basic handling of the horse including catching, haltering, leading and tying.

## Career Information

Many Equine Science graduates aim for a future in horse farm management at breeding facilities, lesson barns, and race and show training stables. Students may also qualify for employment as technologists, consultants, show and race facility managers and staff, high school and community or junior college riding and equine science instructors, government agents, journalists, and sales or service representatives for companies promoting horse feed, health, and care products. Other career opportunities are available through breed associations, humane organizations, agriculture extension services, recreational services, horse publications, and more. Many of these options require more than two years of college study. Classes beyond the associate degree may be required for career options or to fully prepare students for transfer to a university program.

## Animal Science (ANSC) Courses

### ANSC 300 Introduction to Animal Science

<b>Units:</b>	3
<b>Hours:</b>	54 hours LEC
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU; UC
<b>General Education:</b>	AA/AS Area IV
<b>C-ID:</b>	C-ID AG - AS 104
<b>Catalog Date:</b>	June 1, 2021

This course provides a survey of the livestock industry, including the supply of animal products and their uses. A special emphasis is placed on the origin, characteristics, adaptation and contributions of farm animals to the agriculture industry. Students analyze the economic trends and career opportunities in animal agriculture.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1: Explain the importance of animal production financially, socially and environmentally.
- identify economically significant beef cattle, sheep, and swine breeds and areas of production
- evaluate animal contributions to human need
- SLO # 2: Explain the basic physiology of each body systems and relate that knowledge to the overall function of the animal body.
- appraise livestock body conformation and how it relates to function
- examine life cycles and biotechnological principles of animal production
- identify basic nutritional needs and feeding practices of scientific livestock production
- SLO # 3: Demonstrate the ability to think critically and analyze problems
- describe marketing strategies and market classification of livestock
- evaluate animal behavior as it relates to health and performance
- discuss issues affecting consumer awareness to animal welfare, food safety and the environment
- collect and calculate data used to ensure scientifically-based management decisions
- SLO # 4: Analyze and explain the various contributions animals have in various cultures.
- identify cultural contributions to and ethnic influences on the animal industry
- SLO # 5: Compare and contrast a variety of career possibilities in the field of Animal Science
- Identify career opportunities and requirements for successful employment

### ANSC 301 Introduction to Equine Science

<b>Units:</b>	3
<b>Hours:</b>	54 hours LEC
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU; UC
<b>General Education:</b>	AA/AS Area IV
<b>Catalog Date:</b>	June 1, 2021

A survey of the equine industry including equine evolution, selection, nutrition and feeding, breeding, facilities, handling and health management. Emphasis on sound management practices. This course may include field trips and the instructor may or may not provide transportation.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1 Describe the processes involved and outline major events in the evolution and domestication of the horse.
- Identify and describe the instinctive behaviors of the horse.
- Evaluate cultural contributions to and ethnic influences on the horse industry.
- SLO #2 Identify a minimum of eight common breeds of horses and describe their differences.

- Formulate sound management practices pertaining to equine reproduction.
- Describe unique adaptations of the equine's digestive system and implement a sound feeding program.
- SLO #3 Formulate a disease and parasite prevention program for equines.
- Design an equine handling facility, incorporating the basic housing requirements.
- Handle horses properly, applying ground safety practices.
- Successfully manage horses on a limited scale.
- SLO #4 Describe career opportunities and requirements for successful employment in the equine industry.

## ANSC 302 Equine Reproduction

<b>Units:</b>	2
<b>Hours:</b>	32 hours LEC; 12 hours LAB
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU
<b>Catalog Date:</b>	June 1, 2021

This course combines the study of basic genetic principles with the study of the anatomical and physiological aspects of reproduction as they relate to equine reproduction, emphasizing genetic principles and reproductive aspects. Artificial insemination, embryo manipulation, and current innovations in productive biotechnology will also be examined. This course may include field trips and off-site laboratories and the instructor may or may not provide transportation.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1 Relate basic genetic principles to techniques in breeding selection and mating programs.
- Evaluate advantages and disadvantages of common mating systems.
- Compile the possible genetic and phenotypic ratios for two traits.
- SLO #2 Analyze the impact of natural versus artificial insemination.
- SLO #3 Identify anatomy and describe physiology of the male and female equine reproductive tract.
- Describe the origin and functions of the major hormones, both male and female, and explain the role of each in reproduction.
- Describe the correct fetal position, delivery process, approximate timeline and maternal behaviors for a normal parturition.
- Distinguish the signs of gestation and the stages of parturition.
- SLO #4 Analyze the advantages and disadvantages of artificial insemination.
- Determine motility concentration and volume of semen in a given specimen.
- SLO #5 Critique various methods of semen storage.
- List and explain the correct use of specialized insemination tools.
- Summarize latest developments in reproductive technology.
- Examine and interpret latest regulations by breed associations regarding registration of foals.

## ANSC 303 Equine Business Management

<b>Units:</b>	3
<b>Hours:</b>	54 hours LEC
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU
<b>Catalog Date:</b>	June 1, 2021

Fundamentals of equine business operations, including taxes, liability, insurance, software, and facility design. The class will emphasize the skills necessary to manage a ranch, barn, stable, boarding, breeding, or training facility. This course may include field trips and the instructor may or may not provide transportation.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1 Manage legal and tax aspects of an equine business establishment.
- SLO #2 Describe and implement practices and behaviors consistent with professionalism in the workplace.
- SLO #3 Differentiate between appropriate and inappropriate job behavior and conversation.
- Assess liability issues at the workplace and determine appropriate insurance coverage.
- Summarize contracts and write invoices.
- Develop and maintain bookkeeping and record systems.
- SLO # 4 Develop a ranch plan for an equine facility, incorporating legal requirements and regulations.
- Evaluate a variety of office machines and software used in the equine industry.

## ANSC 304 Livestock Feeding and Nutrition

<b>Units:</b>	3
<b>Hours:</b>	36 hours LEC; 54 hours LAB

<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU
<b>C-ID:</b>	C-ID AG - AS 132L
<b>Catalog Date:</b>	June 1, 2021

The fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed. The nutritive value of feeds as they relate to the formulation of livestock rations will be emphasized including by-product feeding. Includes proper selection, evaluation, and utilization of feeds. This course may include field trips and off-site laboratories and the instructor may or may not provide transportation.

## Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1 Identify the role of livestock feeding and its part in human nutrition.
- SLO #2 Identify career requirements and potential opportunities leading to successful employment.
- Identify cultural inputs that have shaped the livestock nutrition industry.
- SLO #3 Apply changing nutritional requirements based upon animal physiological development.
- Comprehend differences in digestive anatomy that contrast feeding practices.
- Demonstrate and comprehend animal behavior as it relates to feeding practices.
- SLO #4 Explain in a verbal and written format the role of nutrition an animal health and ultimately food safety.
- Collect and calculate data used in ration formulation.
- Formulate rations with economic feasibility.
- Define and recall biological and inorganic factors that impact feeding and nutrition industry.
- SLO #5 Evaluate economic factors and trends in feeding.
- Identify various primary and by-product feeds, forms and processing techniques.
- Analyze and comprehend various procurement strategies for feed stuff purchases.

## ANSC 305 Equine Health

<b>Units:</b>	3
<b>Hours:</b>	54 hours LEC
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU; UC
<b>Catalog Date:</b>	June 1, 2021

This course introduces the major organ systems of the horse. Emphasis is on preventive maintenance and necessary managerial practices needed to keep the equine athlete, broodmare or family horse in good health.

## Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1-Describe the general anatomy of the equine.
- SLO #2-Identify and describe common dental problems and abnormalities.
- Age an equine by dental eruption and dentition.
- SLO #3-Identify, describe, and recognize infectious and non-infectious diseases, their clinical signs, treatment options and prognosis.
- Identify and describe common environmental factors that may cause health problems.
- Identify and describe common internal and external parasites and describe the symptoms they produce.
- Develop effective worming and vaccination schedules.
- Identify and describe the factors that can cause colic and describe the prognosis associated with each factor.
- Identify and describe the various types of wounds, and describe how to effectively manage each type.
- SLO #4-Describe the pathogenesis of Navicular Disease and the related foot problems that are differentials and identify and describe common methods of treatment.
- Identify and describe major types of fore and hind limb lameness and indicate how they relate to usability.
- Identify and describe the major factors responsible for laminitis and outline methods for its prevention and treatment.
- SLO #5 Identify and describe the normal reproductive patterns of the mare and the stallion.
- Identify and describe normal foaling behavior and presentation, and outline procedures for the proper care of the neonate.

## ANSC 306 Basic Equine Handling

<b>Units:</b>	1
<b>Hours:</b>	54 hours LAB
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU; UC
<b>Catalog Date:</b>	June 1, 2021

This course offers an introduction to the fundamentals of horse handling, with an emphasis on safety. Course covers identification of equine behavioral patterns, handling skills such as catching, haltering, tying, lunging and round-pen training, and recognizing how human/horse interactions affect equine behavior.

## Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1-Identify and explain basic equine behavior as it relates to riding situations.
- Identify and explain the parts, use, and proper care and storage of essential riding equipment.
- SLO #2-Demonstrate basic handling of the horse including catching, haltering, leading and tying.
- Groom the horse properly before and after riding.
- Saddle and bridle the horse properly.
- Mount and dismount the horse properly and safely.
- SLO #3-Recognize and practice basic horse handling safety skills while on the ground and when mounted.
- Demonstrate basic control of the horse in a round-pen situation at the walk and trot (jog) and recognize the footfall sequence for each gait.
- Safely load and unload a horse from a trailer.
- SLO #4-Demonstrate use of new and innovative techniques in equine handling.
- Demonstrate effective horse restraint.

## ANSC 307 Farrier Science

<b>Units:</b>	3
<b>Hours:</b>	54 hours LEC
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU
<b>Catalog Date:</b>	June 1, 2021

This course covers horseshoeing principles and practices, including basic anatomy and physiology of the horse's limbs and feet, horseshoeing terminology, and guidelines for assessing a proper horseshoeing job. This course focuses on causes, treatment and prevention of common lameness problems.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1-Identify all bones, major ligaments, and tendons of the front and hind limbs and explain their physiological function.
- Diagram the internal and external parts of the hoof and analyze the function of each.
- Analyze the motion of various horses and appraise applicable trimming or shoeing techniques for maximum horse benefit.
- Assess a sample hoof and evaluate measures to gain proper balance.
- Analyze young horse potential foot problems.
- SLO #2-Design a plan to restore proper balance of the hoof.
- Diagnose unsoundness of hoof, appraise causes, and recommend remedies.
- Compare and contrast the different types and fitting of a horseshoe.
- Discuss alternatives for corrective shoeing.
- SLO #3-Evaluate a horseshoeing job for balance, symmetry, and correct angles.
- Compare and contrast various horseshoeing jobs for accuracy of placement, size and angle.

## ANSC 495 Independent Study in Animal Science

<b>Units:</b>	1 - 3
<b>Hours:</b>	54 - 162 hours LAB
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU
<b>Catalog Date:</b>	June 1, 2021

An independent studies project involves an individual student or small group of students in study, research, or activities beyond the scope of regularly offered courses. See the current catalog section of "Special Studies" for full details of Independent Studies.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1: Actively engage in intellectual inquiry beyond that required in order to pass a course of study (College Wide Learning Outcome – Area 4).
- Discuss and outline a proposal of study (that can be accomplished within one semester term) with a supervising instructor qualified within the discipline.
- Design an independent study (to be completed individually or by collaboration of a small group) to foster special knowledge, skills, and experience that are not available in any one regularly scheduled course.
- Use information resources to gather discipline-specific information.
- SLO #2: Utilize modes of analysis and critical thinking to apply theoretical perspectives and/or concepts in the major discipline of study to significant problems and/or educational activities (College Wide Learning Outcome – Area 3).
- Analyze and apply the knowledge, skills and experience that are involved in the independent study to theoretical perspectives and/or concepts in the major discipline of study.
- Explain the importance of the major discipline of study in the broader picture of society.
- SLO #3: Communicate a complex understanding of content matter of the major discipline of study (College Wide Outcome – Area 3).
- Demonstrate competence in the skills essential to mastery of the major discipline of study that are necessary to accomplish the independent study.
- SLO #4: Identify personal goals and pursue these goals effectively (College Wide Outcome – Area 4).
- Utilize skills from the "academic tool kit" including time management, study skills, etc., to accomplish the independent study within one semester term.

# ANSC 498 Work Experience in Animal Science

<b>Units:</b>	0.5 - 4
<b>Hours:</b>	30 - 300 hours LAB
<b>Prerequisite:</b>	None.
<b>Enrollment Limitation:</b>	Students must be in a paid or unpaid internship, volunteer position or job related to career goals in Animal Science.
<b>Transferable:</b>	CSU
<b>General Education:</b>	AA/AS Area III(b)
<b>Catalog Date:</b>	June 1, 2021

This course provides students with opportunities to develop marketable skills in preparation for employment in their major field of study or advancement within their career. It is designed for students interested in work experience and/or internships in transfer level degree occupational programs. Course content includes understanding the application of education to the workforce; completion of required forms which document the student's progress and hours spent at the work site; and developing workplace skills and competencies. Appropriate level learning objectives are established by the student and the employer. During the semester, the student is required to participate in a weekly orientation and 37.5 hours of related paid work experience, or 30 hours of unpaid work experience for 0.5 unit. An additional 37.5 or 30 hours of related work experience is required for each additional 0.5 units. Students may take up to 16 units total across all Work Experience course offerings. This course may be taken up to four times when there are new or expanded learning objectives. Only one Work Experience course may be taken per semester.

## Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1 DEMONSTRATE AN UNDERSTANDING AND APPLICATION OF PROFESSIONAL WORKPLACE BEHAVIOR IN A FIELD OF STUDY RELATED ONE'S CAREER.
- Understand the effects time, stress, and organizational management have on performance.
- Demonstrate an understanding of consistently practicing ethics and confidentiality in a workplace.
- Examine the career/life planning process and relate its relevance to the student.
- Demonstrate an understanding of basic communication tools and their appropriate use.
- Demonstrate an understanding of workplace etiquette.
- SLO #2 DESCRIBE THE CAREER/LIFE PLANNING PROCESS AND RELATE ITS RELEVANCY TO ONE'S CAREER.
- Link personal goals to long term achievement.
- Display an understanding of creating a professional first impression.
- Understand how networking is a powerful job search tool.
- Understand necessary elements of a résumé.
- Understand the importance of interview preparation.
- Identify how continual learning increases career success.
- SLO #3 DEMONSTRATE APPLICATION OF INDUSTRY KNOWLEDGE AND THEORETICAL CONCEPTS AS WRITTEN IN LEARNING OBJECTIVES IN PARTNERSHIP WITH THE EMPLOYER WORK SITE SUPERVISOR.

# ANSC 499 Experimental Offering in Animal Science

<b>Units:</b>	0.5 - 4
<b>Prerequisite:</b>	None.
<b>Transferable:</b>	CSU
<b>Catalog Date:</b>	June 1, 2021

This is the experimental courses description.

## Faculty

[Dawn Howe \(/about-us/contact-us/faculty-and-staff-directory/dawn-howe\)](#)

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# Career Education

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