

# ANSC - Animal Science

## **ANSC 100. Introduction to Animal Science. 3 Credits.** (3 Lec)F,S

Introductory Animal Science includes basic principles of animal genetics, nutrition, live animal evaluation, reproduction, and their application to the production of beef and dairy cattle, sheep, swine, horses, and poultry.

## **ANSC 202. Livestock Feeding. 3 Credits.** (2 Lec, 1 Lab) F

PREREQUISITES: ANSC 100 and placement in Math Level 3 or ACT 23 or SAT 540. Nutrient composition and classification of feedstuffs, feeding recommendations, diet formulation, and ration balancing for various classes of livestock.

## **ANSC 205. Intro to Meat Evaluation. 2 Credits.** (1 Lab) F

PREREQUISITE: ANSC 100. Techniques for the evaluation of carcasses. Procedures include U.S. grading standards, introduction to carcass pricing and objective carcass measurements.

## **ANSC 215. Calving Management. 2 Credits.** (1 Lec, 1 Lab) S

PREREQUISITE: ANSC 100 or consent of instructor. Procedures to correctly identify calving problems and subsequently assist the birthing process and application of techniques to maximize calf survival.

## **ANSC 222. Livestock in Sustain Systems. 3 Credits.** (3 Lec) S

PREREQUISITE: Sophomore standing and ANSC 100 is recommended. The role of livestock in balanced sustainable and organic systems will be explored with a primary focus on incorporating targeted grazing into farming systems. The principles of sustainable animal production and the regulations associated with organic animal production will be presented.

## **ANSC 232. Livestock Management - Sheep I. 1 Credit.** (1 Lab) S

PREREQUISITE: ANSC 100. Management practices associated with farm flock and range sheep enterprises.

## **ANSC 234. Livestock Management - Beef I. 1 Credit.** (1 Lab) S

PREREQUISITE: ANSC 100. Hands-on laboratories to familiarize students with the principles of beef cattle handling and management.

## **ANSC 265. Anatomy and Physiology of Domestic Animals - Lecture. 3 Credits.** (3 Lec) S

PREREQUISITE: BIOB 160, Sophomore standing. COREQUISITE: ANSC 266 The lecture defines and identifies the organization of cell types into tissues and organ systems. The lecture explains the physiology of organ systems in domestic farm animals.

## **ANSC 266. Anatomy and Physiology of Domestic Animals - Lab. 1 Credit.** (1 Lab) S

PREREQUISITE: BIOB 160, Sophomore standing. CO-REQUISITE: ANSC 265 Location, structure and identification of various tissues, organs, and systems of domestic animals through dissection of cadaver animals through dissection of cadaver animals. Lab utilizes ruminants and monogastric species.

**ANSC 290R. Undergraduate Research. 1-6 Credits.** (1-6 Ind; max unlimited) PREREQUISITE: Consent of instructor and approval of department head. Directed undergraduate research which may culminate in a written work or other creative project. Course will address responsible conduct of research. May be repeated.

**ANSC 291. Special Topics. 1-4 Credits.** (1-4 Lec; 12 cr max) On Demand PREREQUISITE: None required but some may be determined necessary by each offering department. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

**ANSC 292. Independent Study. 1-3 Credits.** (1-3 Ind; 6 cr max) On Demand PREREQUISITE: Consent of instructor and approval of department head. Directed research and study on an individual basis.

**ANSC 305. Advanced Meat Evaluation. 2 Credits.** (2 Lec) F PREREQUISITE: ANSC 205 or consent of instructor. Advanced skills in carcass evaluation, U.S. grading standards, and carcass pricing.

## **ANSC 308. Livestock Evaluation. 2 Credits.** (1 Lab) F

PREREQUISITE: ANSC 100 and ANSC 205, or consent of instructor. Techniques and experience in live animal evaluation. Practical use of production data and other evaluation techniques.

## **ANSC 316. Meat Science. 4 Credits.** (3 Lec, 1 Lab) S

PREREQUISITE: ANSC 100, BIOB 160, and CHMY 121IN or CHMY 141 and CHMY 143 and junior standing. The meat industry within North America and beyond will be discussed. Live animal evaluation, pricing and carcass evaluation will be discussed. The class will include an explanation of muscle structure and function and its effect on tenderness and functionality.

## **ANSC 320. Animal Nutrition. 3 Credits.** (3 Lec) F

PREREQUISITE: ANSC 100, ANSC 265, ANSC 266, and CHMY 123 or CHMY 211. Concepts of digestion and metabolism of nutrients, integrated with practical feeding of various classes of livestock.

## **ANSC 321. Physiology of Animal Reproduction. 4 Credits.** (4 Lec) F

PREREQUISITE: ANSC 100, ANSC 265, ANSC 266, and CHMY 123 or CHMY 211. A study of the anatomy and physiology of reproduction of vertebrates with major emphasis on mammalian domestic animal and wildlife species. This class introduces students to emerging concepts and current technologies for altering reproductive efficiency in a variety of animal species, including humans.

## **ANSC 322. Principles of Animal Breeding and Genetics. 3 Credits.** (3 Lec) S

PREREQUISITE: ANSC 100, BIOB 160, and STAT 216Q. Genetic improvement of farm animals through performance testing, methods of selection, and application of mating systems such as crossbreeding.

## **ANSC 337. Disease of Domestic Livestock. 3 Credits.** (3 Lec) S

PREREQUISITE: ANSC 100, ANSC 222, ANSC 265 and ANSC 266. This course is structured to familiarize students with the common diseases of domestic livestock. Infectious and non-infectious diseases of horses, cattle, sheep and swine will be covered. Particular emphasis will be placed on regional diseases.

## **ANSC 395. Field Experience: Livestock. 1 Credit.** (1 Lab) On Demand

PREREQUISITE: ANSC 100 and junior standing. Exposure of students to livestock operations and related business enterprises in different geographical locations. One three-day field trip. Graded P/F.

## **ANSC 408. Advanced Livestock Evaluation. 3 Credits.** (3 Lec) F,S

PREREQUISITE: ANSC 308 or equivalent. Advanced skills in evaluation of animals and data associated with growth and genetic improvement. Develop decision making and oral communication skills.

## **ANSC 410. Veterinary Entomology and Parasitology. 3 Credits.** (3 Lec) S

Alternate Even Years PREREQUISITE: ANSC 100 and BIOB 160 or higher level biology. This course will provide an overview of the importance of arthropods and their effects on human and animal health. Topics covered will include classification and identification of insects, mites, and ticks, basic biology, behavior and ecology, feeding mechanisms, pathogen transmission, vector competency, production impacts, integrated management and prevention.

## **ANSC 416R. Meat Processing. 3 Credits.** (2 Lec, 1 Lab) F

PREREQUISITE: ANSC 316 or consent of instructor. Students will learn to manufacture processed meat products such as fresh sausage, ham, bacon and cooked sausages. They will also be developing new flavor profiles and new products that will be presented to a panel with proposed marketing plans.

## **ANSC 418. Topics in Beef Nutrition. 2 Credits.** (2 Lec) S alternate years, to be offered even years.

PREREQUISITE: ANSC 320 and Junior standing or consent of instructor. Critical evaluation of current issues and related scientific literature in beef cattle nutrition; application to decision making and problem solving.

## **ANSC 421. Assisted Reproduction Technologies w/ Lab. 4 Credits.** (2 Lec, 2 Lab) F

PREREQUISITE: ANSC 321. Reproductive management programs applying physiological knowledge to increase meat and milk production in cattle. Experience in the techniques of artificial insemination and pregnancy evaluation in cattle.

## **ANSC 432R. Sheep Management. 3 Credits.** (2 Lec, 1 Lab) S

PREREQUISITE: ANSC 232 and ANSC 320 and ANSC 321. COREQUISITE: ANSC 232. Management of the ewe flock, nutrition, reproduction, economics, breeding, and health related to efficient sheep production will be discussed. Production preparation and wool marketing in U.S. and world markets and economics of Montana wool production will be covered.

## **ANSC 434R. Beef Cattle Management. 4 Credits.** (2 Lec, 2 Lab) F

PREREQUISITE: NRSM 101, NRSM 102, and ANSC 320; preferred ANSC 321 and ANSC 322. Integration of the principles of nutrition, genetics, physiology, range ecology, and economics into practical and profitable ranch management and business plans. Utilization of performance and financial records, budgeting, feed resource planning, marketing strategies, breeding plans, computer applications, and case studies.

## **ANSC 436. Professional Development in Beef Production Systems. 2 Credits.** (1 Lec, 1 Lab) F

PREREQUISITES: ANSC 100, ANSC 320, or ANSC 408. This course will allow for hands-on experiences in livestock operations. Students will directly interact with professionals and be exposed to topics such as nutrition, health care, management and marketing in the beef cattle industry.

**ANSC 437. Professional Development in Beef Feedlot Systems. 2 Credits.** (1 Lec, 1 Lab)

PREREQUISITES: ANSC 100, ANSC 320 and/or ANSC 408. This course will allow for hands-on experiences in beef cattle operations, specifically the feeding and marketing for finished beef. Students will directly interact with industry professionals and be exposed to topics such as nutrition, health, management and marketing in the beef cattle industry.

**ANSC 490R. Undergraduate Research. 1-6 Credits.** (1 Ind; 12 cr max)

PREREQUISITES: Consent of instructor and approval of department head. Directed undergraduate research which may culminate in a research paper, journal article, or undergraduate thesis. May be repeated.

**ANSC 491. Special Topics. 1-4 Credits.** (1-4 Lec; 12 cr max) On Demand

PREREQUISITE: Course prerequisites as determined for each offering. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

**ANSC 492. Independent Study. 1-3 Credits.** (1-3 Ind; 6 cr max) On Demand

PREREQUISITE: Junior standing, consent of instructor and approval of department head. Directed research and study on an individual basis.

**ANSC 494. Seminar. 1 Credit.** (1 Sem; 4 cr max) On Demand

PREREQUISITE: Junior standing and as determined for each offering. Topics offered at the upper division level which are not covered in regular courses. Students participate in preparing and presenting discussion material.

**ANSC 498. Internship. 1-6 Credits.** (1-6 Ind; 6 cr max) On Demand

PREREQUISITE: Completion of 2 of the following courses; ANSC 316, ANSC 320, ANSC 321, ANSC 322 or ANSC 337 and junior standing, consent of instructor and approval of department head. COREQUISITE: 2 of the following; ANSC 316, ANSC 320, ANSC 321 or ANSC 337 An individualized assignment arranged with an agency, business, or other organization to provide guided experience in the field.

### **Font Notice**

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Adobe Garamond Pro.

The editor may contact Leepfrog for a draft with the correct fonts in place.