**DAIRY SCIENCE (DY SCI)**

**DY SCI 1 — COOPERATIVE EDUCATION/CO-OP IN DIARY SCIENCE**
1 credit.

Full-time off-campus work experience which combines classroom theory with practical knowledge of operations to provide students with a background upon which to base a professional career. Students receive credit only for the term in which they are actively enrolled and working. The same work experience may not count towards credit in Dairy Sci 399.

**Requisites:** So st, and consent of supervising instructor and academic advisor.

**Repeatable for Credit:** No

**DY SCI/AN SCI 101 — INTRODUCTION TO ANIMAL SCIENCES**
4 credits.

Anatomy physiology, nutrition, genetics, reproduction, marketing, meats and management of dairy and beef cattle, swine, sheep, poultry and horses; lectures, laboratories and discussion. Field trips.

**Requisites:** Open to Freshmen

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

**Level - Elementary**

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2016

**DY SCI 205 — DAIRY CATTLE SELECTION**
2 credits.

Dairy cattle evaluation and selection, including: linear type appraisal, dairy cattle judging, mating programs, breed comparisons, cattle marketing plans, and national genetic improvement programs. Open to Fr

**Requisites:** Dy Sci/AN SCI/DY SCI 101.

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**DY SCI 223 — DAIRY HERD MANAGEMENT I**
3 credits.

Overview of practical dairy herd management with components of reproduction, nutrition, milk quality, raising dairy replacements, facilities and records. Laboratories emphasize practical applications, analyses of alternatives and decision making. Includes farm visits and analysis.

**Requisites:** Dy Sci/AN SCI/DY SCI 101 or consent of instructor

**Repeatable for Credit:** No

**Last Taught:** Fall 2016

**DY SCI 234 — DAIRY HERD MANAGEMENT II**
3 credits.

The second of a two course sequence designed as an overview of practical dairy herd management with components of animal welfare and handling, health, calf and heifer rearing, facilities and production economics. Laboratories emphasize practical applications, investigation of alternatives and decision making. Includes farm visits and a hands-on transition cow project for analysis.

**Requisites:** Dairy Science/Animal Science 101 or consent of instructor, successful completion of Dairy Science 233

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**DY SCI 272 — PRE-CAPSTONE SEMINAR**
1 credit.

In this course, students develop individualized four-year course plans, learn about internships and job opportunities, and discuss leadership development opportunities. Students learn about, and prepare for, active and independent learning from juniors and seniors who have successfully completed independent learning projects including internships, senior seminars and other "capstone" experiences. Intended for prospective or declared Dairy Science majors in their first year or who have not completed DY SCI 399 - Internship

**Requisites:** None

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

**DY SCI 289 — HONORS INDEPENDENT STUDY**
1-2 credits.

**INTER-AG 288**

**Requisites:** Enrolled in the CALS Honors Prgm Sophomore or Junior standing.

**Course Designation:** Honors - Honors Only Courses (H)

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 1998

**DY SCI 299 — INDEPENDENT STUDY**
1-3 credits.

**Requisites:** Open to Freshmen, Sophomore or Junior standing written consent of instructor

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Summer 2017
DY SCI 305 — LACTATION PHYSIOLOGY
3 credits.

The course focuses on lactation physiology across mammalian species. Structure and function of mammary glands; hormonal control of mammary development and lactation; cellular mechanisms of milk synthesis; the chemistry of milk synthesis; mastitis and other abnormalities of mammary functions. This course has a laboratory component.

**Requisites:** ZOOLOGY/BIOLOGY 101 or BIOLOGY/BOTANY/ZOOLOGY 151/152; and BMOLCHEM 314 or BIOCHEM 501 or concurrent enrollment

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

**Level:** Intermediate

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Grad 50% - Counts toward 50% graduate coursework requirement**

**Repeatable for Credit:** No

**Last Taught:** Fall 2016

DY SCI/AN SCI/NUTR SCI 311 — COMPARATIVE ANIMAL NUTRITION
3 credits.

Nutrients and their source, assimilation, function and requirement.

**Requisites:** BMOLCHEM 314 or CHEM 341 or CHEM 343 or cons inst

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

**Level:** Intermediate

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

DY SCI/AN SCI 313 — ANIMAL FEEDS AND DIET FORMULATION
1 credit.

Designed as a companion course for Dairy Science 311 (comparative animal nutrition) with emphasis on quantitative and practical aspects of animal feeds and diet formulation.

**Requisites:** MATH 112, Dy Sci/AN SCI/DY SCI 101, or consent of instructor; concurrent registration in Dy Sci/An Sci/NUTR SCI/AN SCI/DY SCI 311 recommended

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

**Level:** Intermediate

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

DY SCI/AN SCI 320 — ANIMAL HEALTH AND DISEASE MANAGEMENT
3 credits.

Principal causes and identification of animal diseases, common diseases of farm animals, zoonoses and public health, disease prevention and management including biosecurity measures and host immune responses.

**Requisites:** ZOOLOGY/BIOLOGY 101/102, BIOLOGY/BOTANY/ZOOLOGY 152, Biocore or cons inst

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2016

DY SCI/AN SCI 361 — INTRODUCTION TO ANIMAL AND VETERINARY GENETICS
2 credits.

The molecular basis for inheritance of monogenic and polygenic traits related to animal disease and production. An introduction to the principles of improving animal health and performance by selection and mating systems in companion animals, horses, livestock, and poultry.

**Requisites:** Genetics 160 or 466 or con reg course in statistics

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

DY SCI/AN SCI 362 — VETERINARY GENETICS
2 credits.

The genetic basis for predisposition to disease or resistance to disease in livestock and companion animal species. Genetic defects, their discovery, diagnosis and treatment.

**Requisites:** Dy Sci/AN SCI/DY SCI 361; or Genetics 160 or 466 Zool/Bot 152

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

DY SCI/AN SCI 363 — PRINCIPLES OF ANIMAL BREEDING
2 credits.

Application of the principles of quantitative genetics to the improvement of livestock and poultry; breeding value estimation and selection techniques; effects of inbreeding and hybrid vigor; crossbreeding systems.

**Requisites:** Dy Sci/AN SCI/DY SCI 361

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

DY SCI/AN SCI 370 — LIVESTOCK PRODUCTION AND HEALTH IN AGRICULTURAL DEVELOPMENT
3 credits.

Physical, biological and social nature of animal agriculture systems and their improvement in developing countries; analysis of the state of livestock research and development in the developing countries and the world role of U.S. animal agriculture.

**Requisites:** An Sci/DY SCI/AN SCI 101 or cons inst

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2016
DY SCI/AGROECOL/AGRONOMY 371 — MANAGED GRAZING FIELD STUDY
1-2 credits.

This is a course for students who are interested in developing a comprehensive understanding of the principles, practices, and conservation potential of managed grazing systems, and how these farming systems may contribute to the sustainability and diverse tapestry of Wisconsin's working landscape. Students will visit managed grazing systems of successful grazing-based farmers (grazers) across southern/central counties in Wisconsin, and/or research sites at UW's Arlington and/or Lancaster Research Stations and/or the Discovery Farms Program. Students will have the opportunity to discuss at length with farm managers and researchers the practices in place at each farm and research site. Readings will be assigned and discussed. Students will be introduced to CALS/UWEX pasture forage/nutrient management planning and budgeting software. A course fee (expected to be approx. $75-$100/student) will be assessed to cover transportation between field sites and farmer-grazier cooperator honoraria.

Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

DY SCI/AN SCI 373 — ANIMAL PHYSIOLOGY
3 credits.

Students will develop an understanding of physiological processes that regulate the body, learn the anatomy and function of different physiological systems, describe interactions between organ systems, study regulation of an organ system from the molecular to whole animal level, and identify differences between species in the same systems.

Requisites: Biology/ZOOLOGY/BIOLOGY 101 or Biology/Zoology/BOTANY/BIOLOGY/ZOOLOGY 151 and Biology/Zoology/BOTANY/BIOLOGY/ZOOLOGY 152
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

DY SCI 375 — SPECIAL TOPICS
1-4 credits.

Requisites: Cons inst
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

DY SCI 399 — COORDINATIVE INTERNSHIP/COOPERATIVE EDUCATION
1-8 credits.

Requisites: So, Jr or Sr st cons supervising inst, advisor, and internship coordinator
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017

DY SCI 400 — STUDY ABROAD IN DAIRY SCIENCE
1-6 credits.

Provides an area equivalency for courses taken on Madison Study Abroad Programs that do not equate to existing UW courses. W.-Madison Study Abroad Program
Requisites: Current registration in a U.
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2011

DY SCI/AN SCI 414 — RUMINANT NUTRITION
2 credits.

Integrates basic nutrition concepts and ration balancing skills by teaching students to balance and troubleshoot rations for various domesticated ruminants. An Sci/DY SCI/AN SCI 313 is recommended.

Requisites: AN SCI/DY SCI/AN SCI/NUTR SCI 311
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

DY SCI/AN SCI 434 — REPRODUCTIVE PHYSIOLOGY
3 credits.

Principles of reproductive physiology, improvement of fertility, and artificial insemination.

Requisites: Jr st, An Sci/DY SCI/AN SCI 101, or Zool 101 102; Zool 151 152 recommended
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

DY SCI/AN SCI/ENVIR ST/SOIL SCI 468 — MANAGING THE ENVIRONMENTAL IMPACTS OF LIVESTOCK OPERATIONS
2 credits.

Introduces nonpoint pollution policies and regulations and environmental losses impacting air and water quality. Discuss management practices that influence the cycling and balance of nitrogen and phosphorus across a farm and its components (livestock, crop and soil).

Requisites: Jr st
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2013
DY SCI/AN SCI/FOOD SCI/SOIL SCI  472 — ANIMAL AGRICULTURE AND GLOBAL SUSTAINABLE DEVELOPMENT  
1 credit.

This course examines issues related to global agriculture and healthy sustainable development. Using a regional approach and focusing on crops and livestock case studies, students will learn the interdependence between US agriculture and agriculture in emerging economies. Some topics covered include population and food, immigration, the environment; crop and livestock agriculture; global trade; sustainability; food security, the role of women in agriculture, and the role of dairy products in a healthy diet.  
Requisites: None  
Repeatable for Credit: No  
Last Taught: Spring 2017

DY SCI/AN SCI/FOOD SCI/SOIL SCI  473 — INTERNATIONAL FIELD STUDY IN ANIMAL AGRICULTURE AND SUSTAINABLE DEVELOPMENT  
2 credits.

This course is the field study component to DY SCI/AN SCI/FOOD SCI/SOIL SCI  472, which examines issues related to global agriculture and healthy sustainable development. Using a regional approach and focusing on crops and livestock case studies, students will learn the interdependence between US agriculture and agriculture in emerging economies. Some topics covered include population and food, immigration, the environment; crop and livestock agriculture; global trade; sustainability; and the role of women in agriculture and the role of dairy products in a healthy diet.  
Requisites: DY SCI/AN SCI/FOOD SCI/SOIL SCI  472  
Repeatable for Credit: No  
Last Taught: Summer 2017

DY SCI 534 — REPRODUCTIVE MANAGEMENT OF DAIRY CATTLE  
3 credits.

This course is designed to provide students with the technical knowledge and practical skills to design and execute an effective reproductive management program for dairy cattle. Each week students will participate in lectures and discussions of the key reproductive physiology and practical research results that underlie reproductive management programs. Students will also participate in hands-on laboratories twice per week in which they will learn, practice, and demonstrate practical reproductive management techniques including: Semen handling, artificial insemination, and ultrasound of ovaries and uterus.  
Requisites: AN SCI/DY SCI/AN SCI  434  
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement  
Repeatable for Credit: No  
Last Taught: Spring 2017

DY SCI 535 — DAIRY FARM MANAGEMENT PRACTICUM  
3 credits.

Principles of nutrition, breeding, reproduction, and management at the farm level are integrated. Students will develop skills in decision making, information gathering, problem solving, and interpersonal communication through fieldtrips to working commercial dairy operations.  
Requisites: DY SCI 233, 434, 361  
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement  
Repeatable for Credit: No  
Last Taught: Spring 2017

DY SCI 681 — SENIOR HONORS THESIS  
2-4 credits.  
Requisites: Honors candidacy  
Course Designation: Honors - Honors Only Courses (H)  
Repeatable for Credit: Yes, unlimited number of completions  
Last Taught: Fall 2008

DY SCI 682 — SENIOR HONORS THESIS  
2-4 credits.  
Continuation of 681.  
Requisites: Honors program candidacy DY SCI 681  
Course Designation: Honors - Honors Only Courses (H)  
Repeatable for Credit: No  
Last Taught: Spring 2009

DY SCI 690 — PROSEMINAR  
1 credit.  
Critical review, evaluation and presentation of current research; 736lication of research to practical problems; career preparation, job application procedures. Required for Dy Sci majors.  
Requisites: Sr st  
Repeatable for Credit: No  
Last Taught: Fall 2015

DY SCI 699 — SPECIAL PROBLEMS  
1-3 credits.  
Requisites: Sr st cons inst  
Course Designation: Level - Advanced  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Repeatable for Credit: Yes, unlimited number of completions  
Last Taught: Summer 2017

DY SCI 799 — PRACTICUM IN DAIRY SCIENCE TEACHING  
1-3 credits.  
Instructional orientation to teaching at the higher education level in the agricultural and life sciences, direct teaching experience under faculty supervision, experience in testing and evaluation of students, and the analysis of teaching performance.  
Requisites: Grad st cons inst  
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement  
Repeatable for Credit: No  
Last Taught: Spring 2017

DY SCI/AN SCI  824 — RUMINANT NUTRITIONAL PHYSIOLOGY I  
4 credits.  
Focuses on rumen microbiology, metabolite modeling, as well as protein and VFA nutrition and metabolism. Students should have undergraduate coursework in rumen nutrition, biochemistry, and microbiology as background.  
Requisites: Graduate or professional standing  
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement  
Repeatable for Credit: No
DY SCI 875 — SPECIAL TOPICS
1-4 credits.

Requisites: Grad st and cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016

DY SCI 900 — SEMINAR
1 credit.

Comprehensive reviews of research aimed at broadening understanding of dairy science.
Requisites: Dairy Science 690
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

DY SCI/AN SCI 931 — SEMINAR IN ANIMAL NUTRITION
1 credit.

Discussion of literature that has a bearing on animal nutrition. Students are to survey the literature and present a seminar.
Requisites: Grad st cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

DY SCI/AN SCI 950 — SEMINAR IN ANIMAL GENOMICS
1 credit.

Study of current literature in gene mapping, study designs, and application of markers in genetic improvement programs.
Requisites: Grad st cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2009

DY SCI/AN SCI/GENETICS 951 — SEMINAR IN ANIMAL BREEDING
1 credit.

Requisites: Cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

DY SCI 990 — RESEARCH
1-12 credits.

Requisites: Grad st cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017