



ASCI 118: INTRODUCTION TO DAIRY SCIENCE

Proposer:

Name:	Email:
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Effective Term:

Fall 2022

Credit Status:

Credit - Degree Applicable

Subject:

ASCI - Animal Science

Course Number:

118

Catalog Title

Introduction to Dairy Science

Catalog Description

Survey of the dairy industry; supply of milk and milk products and their uses; emphasis on the history, development and projections of the dairy industry in the US. Covers general information on the economics of dairying; dairy facts and trends; dairy animal selection, culling, fitting, showing, and judging; pedigree evaluation; basic dairy feeds and feeding; fundamentals of bovine reproduction; basic dairy management skills; requirements for and opportunities in dairy industry employment.

Method of Instruction:

Distance Education
Laboratory
Lecture and/or Discussion

Course Units/Hours:**Course Units Minimum:**

3

Lecture Hours Minimum (week)

3

Lab Hours Minimum (week)

1

Activity Hours Minimum (week)

0

Total Contact Hours Minimum (semester)

70

Total Outside Hours Minimum (semester)

105

Total Student Learning Minimum Hours (semester)

175

Repeatability:

No

**Open Entry/Exit:**

No

Field Trips:

Not Required

Grade Mode:

Standard Letter

TOP Code:

010230 - * Dairy Science

SAM Code:

C - Clearly Occupational

Course Content**Methods of Assessment:**

Essay quizzes or exams
 Multiple choice tests
 Oral presentations
 Problem solving assignments or activities
 Problem solving quizzes or exams
 Project
 Short answer quizzes or exams
 Skill demonstrations
 Written essays or extended papers

Course Topics:

Course Topics	
1	Introduction to the Dairy Industry: history of dairying including the contributions of ethnic groups, economic importance of dairying to the US and to international commerce, past, present and future trends in the dairy industry, milk and by-product consumption trend, innovations in the dairy industry
2	Career Opportunities and Career Preparation in the Dairy Industry: career preparation, employment opportunities in production, processing and marketing, degree and skill development requirements for success in the Dairy Industry
3	Essentials of Success in the Dairy Business: financial requirements to operate a dairy, sources of land, seed stock, feed and equipment, management of the labor force on the dairy, governmental regulations (i.e.: Environmental Impact Reports, etc.)
4	Dairy Breeds, Origin and Adaptation: Bos taurus versus Bos indicus cattle breeds, average milk, fat and protein production of each dairy breed, each breed's rank in popularity, advantages and disadvantages of each dairy cattle breed
5	Development of a Dairy Herd: developing a dairy enterprise, selecting a breed, locating a market for milk and/or milk products, evaluating quota, base and overbase milk, and the change in California's dairy structure since 2018
6	Managing a Dairy Herd: selecting seed stock, analysis of pedigree and production records, feeding dairy animals, dehorning, vaccinating, castrating, teat removal and other production management skills
7	Reproductive Management: advantages of and limitations to reproductive management, methods of heat synchronizing cows and heifers, compare the use of natural service versus artificial insemination, embryo Transfer
8	Care and Management of Calves: prenatal care of the calf, from birth to weaning, feeding, vaccinating and general management
9	Introduction to cow comfort, animal welfare, and facility design
10	Introduction to common diseases seen in dairy calves, heifers, and cows throughout different periods of lactation

Course Objectives:

Course Objectives	
1	Discuss and recall historical developments of the dairy industry in the United States.
2	Explain the importance of the dairy industry in California and the United States.



3	Distinguish between the major dairy cattle breeds, and recall the origin, adaptation and production of each breed.
4	Examine and evaluate the opportunities and requirements of the dairy business.
5	Analyze production, breeding and management records related to the dairy industry.
6	Identify the anatomical parts of the cow and relate each part to its form and function.
7	Define the nutritional needs and demonstrate proper feeding techniques of dairy cattle.
8	Analyze, translate and discuss dairy cattle pedigrees, linear scores and production records.
9	Demonstrate the ability to properly groom, fit and show a dairy animal.
10	Demonstrate proper management skill involving dehorning, vaccinating, castrating, hoof trimming and teat removal of dairy cattle.
11	Identify cultural influences on the dairy industry.
12	Practice dairy cattle selection and judging skills.
13	Analyze the concern of animal rights and the importance of educating the general public.
14	Research and discuss career opportunities and requirements for successful employment in the dairy industry.

Course Outcomes:

Course Outcomes	
1	Upon completion of this course, students will be able to list and define training needs, skills and education for a career in the dairy industry.
2	Upon completion of this course, students will be able to identify the proper steps to a milking routine and how to detect mastitis.
3	Upon completion of this course, students will be able to interpret, demonstrate, and list concepts and skills needed to manage reproduction in a dairy herd.

Assignments:

Assignment Type:	Details
Lab	Evaluate dairy products through smell and taste, and discuss differences in packaging and processing techniques to make each product. Take a dairy tour and evaluate the facilities, milking parlor, and cow comfort.
Writing	Students are to choose a disease that occurs in dairy cattle and create an informational handout that could be placed in a dairy protocol binder including disease name, disease cause, signs of disease, treatment, and prevention.
Homework	Assignment 4: Feeding & Nutrition 1. Label the parts of the ruminant stomach and describe the inner appearance and main function of each compartment. 2. Approximately how much water does an adult dairy cow drink per day? Where does she get water? Where does she lose water? 3. What is the difference between structural and non-structural carbohydrates? Give one example of each. 4. What are carbohydrates broken down into within the rumen? Name all three. 5. What's the difference between forage and concentrate feeds? Give two examples of each.
Reading	Students will choose a current news or state-of-the-industry article from an issue of Hoard's Dairyman to read and summarize for the class.

Textbooks or other support materials

Resource Type:	Details
Books	John R. Campbell and Robert T. Marshall. Dairy Production and Processing, First Edition. 2016. ISBN 9781478611202
Web/Other	Holstein Foundation Publications. http://www.holsteinfoundation.org/education/workbooks.html
Periodicals	Hoard's Dairyman, The National Dairy Farm Magazine, W.D. Hoard & Sons Co.

Transferable to CSU

Yes - Approved

**CSU General Education**

Transferable to CSU

This course will also be proposed for UC transfer.

No

Other Degree Attributes

Degree Applicable

Not a Basic Skills Course

Distance Learning Addendum

DSCI 101 DLA (1).pdf

Additional Attachment

Prefix Change DSCI.pdf

Banner Title:

Introduction to Dairy Science

Curriculum Committee Approval Date:

03/09/2022

Academic Senate Approval Date:

03/23/2022

District Governing Board Approval Date:

04/18/2022

Course Control Number:

CCC000281692

C-ID:

AG-AS 112L