I. **OVERVIEW**
The following information will appear in the 2012 - 2013 catalog

ANSC 228  *Dairy Management* 3 Units

*Recommended for Success:* Before enrolling in this course, students are strongly advised to satisfactorily complete ANSC 220 and satisfactorily complete ANSC 224 and satisfactorily complete AGEC 200.

Economics of dairying; milk production and marketing and their relationship to income; computing production costs; analyzing dairy enterprises; business planning; farm selection; management problems relating to feeding, labor, replacements, cow comfort, breeding, work simplification and record keeping. Term problem and field laboratories required.

Field trips are required.  (A-F Only) Lecture /Lab

**Transfer:** (CSU)

II. **LEARNING CONTEXT**
Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. **COURSE CONTENT**

1. **Required Content:**

   a. Evaluating your current operation
      i. What's it all about?
      ii. Where are you today?

   b. Strategy development
      i. Will you need to increase herd size if you modernize?
      ii. How do you make a business?
      iii. Business planning

   c. Facility Planning
      i. How much money is available?
      ii. What dairy management system will be selected?
      iii. What size and type of milking facility will be used?
      iv. How will the parlor complex and freestall barns be arranged?
      v. How will manure be handled?
      vi. How will cows be fed?
      vii. What freestall bedding material will be used?
viii. How and where will animals be handled?
ix. Which parts of the existing facilities will be used and for what purposes?

d. Animal handling needs
i. Methods and locations of animal handling
ii. Animal handling - possible systems

e. Animal housing options
i. Animal grouping strategies
ii. Special needs facilities
iii. Milking cow barn sizing
iv. Example of new facility with double-12 milking parlor
v. Freestall barn design

f. Animal housing features
i. Building Access
ii. Ventilation
iii. Concrete surfaces
iv. Lighting
v. Flexibility
vi. Expandability
vii. Gates
viii. Feed mangers
ix. Waterers
x. Fans and Sprinklers
xi. High-volume low-speed fans
xii. Tunnel ventilation

g. Freestall design and bedding material
i. Freestall design
ii. Bedding material choices
iii. Sand versus mattresses-performance and producer satisfaction

h. Site selection
i. Long term goals
ii. Herd-size implications of expansion alternatives

iii. Site selection factors

iv. Expansion on an existing site

v. Building a new dairy

i. Milking center options
   i. Milking center types
   ii. Sizing a milking system
   iii. Milking center components
   iv. Use of existing buildings to house milking centers
   v. Milking procedure implications
   vi. Efficiency implications
   vii. Milking system performance
   viii. Parlor performance

j. Feeding the dairy herd
   i. Defining your feeding program
   ii. Determining feed storage needs
   iii. Feed mixing and delivery options
   iv. Balancing feed storage capacities with expected needs
   v. The decision process—an example
   vi. Cropland required
   vii. Determining forage storage type

k. Manure handling options
   i. Freestall barn manure collection and removal systems
   ii. Manure transport methods
   iii. Manure storage options
   iv. Sizing manure storage
   v. Other considerations
   vi. Methane digestion
   vii. Vacuum loading

l. Animal acquisition
i. Factors to consider
ii. Animal sources
iii. Animal types
iv. Transition problems

m. Heifer raising options
   i. Heifer raising objectives
   ii. Heifer raising costs
   iii. Custom heifer raisers
   iv. Heifer facilities

n. Labor requirements and scheduling
   i. Number of employees
   ii. Compensation
   iii. Scheduling labor
   iv. Types of employees

o. Labor management
   i. Leadership styles
   ii. Employee growth
   iii. Organizing the workforce
   iv. Job descriptions
   v. Employee handbook development
   vi. Hiring the right employees
   vii. Interviewing
   viii. Training
   ix. Performance evaluation

p. Record keeping systems
   i. Uses of data for decision making
   ii. Types of record-keeping systems maintained by dairy producers
   iii. Limitations of tying costs to events
   iv. Information types
   v. Examples
   vi. Using the data collected
q. Acquisition of products and services
   i. Partnership arrangements
   ii. Enterprise choices
   iii. Types of custom operators
   iv. Estimating agricultural field machinery costs
   v. Establishing building rental costs
   vi. Calculating feed requirements
   vii. Buy-sell agreements for crops or TMR
   viii. Heifer-raising contracts

2. **Required Lab Content:**
   a. How to approach to a dairy evaluation
   b. How to make personality count when hiring an employee
   c. Site evaluation
   d. Soil constitution and measurements
   e. Irrigation system requirements and delivery evaluation
   f. Determination of crops to plant and timing
   g. Calculating the herd feed needs on an annual basis
   h. Alternatives to dry lot dairies, their worth and place
   i. Observation and evaluation of dairy equipment and supplies
   j. Housing and cow comfort determinations
   k. Expansion design analysis
   l. Cropping feasibility study
   m. Labor requirements and laws awareness
   n. Purchase and finance seminar discussion
   o. Developing budgets, cash flows, and balance sheets

B. **ENROLLMENT RESTRICTIONS**

1. **Advisories**

   Before enrolling in this course, students are strongly advised to satisfactorily complete ANSC 220 and satisfactorily complete ANSC 224 and satisfactorily complete AGEC 200.

2. **Requisite Skills**
Before entering the course, the student will be able to:

- a. Explain the dairy industry and dairy animal behavior.
- b. Describe common record keeping procedures.

### C. HOURS AND UNITS

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<tr>
<th>Inst Method</th>
<th>Term Hours</th>
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3 Units

### D. METHODS OF INSTRUCTION (TYPICAL)

Instructors of the course might conduct the course using the following method:

1. Lecture and discussion.
2. Demonstration.
3. Use of audio-visual materials.
4. Field trips to various dairies.
5. Presentations by industry professionals.

### E. ASSIGNMENTS (TYPICAL)

1. **EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS**
   
   Time spent on coursework in addition to hours of instruction (lecture hours)
   
   - a. Study and preparation for weekly quizzes, midterm and final exam.
   - b. Written evaluations of dairies observed while on field trips.

2. **EVIDENCE OF CRITICAL THINKING**
   
   Assignments require the appropriate level of critical thinking
   
   - a. After evaluating the project dairy, recommend upgrades to improve productive abilities and justify the expense in the budget, cash flow, and balance sheet.
   - b. Develop and justify a comprehensive dairy management plan that incorporates ideas from various other dairy visits, trade shows and seminars that will increase profit.
   - c. Explain the correlations between animal behavior, animal stress, and environment to the productive levels of the project herd.

### F. TEXTS AND OTHER READINGS (TYPICAL)

A. **COURSE GOAL**  
*As a result of satisfactory completion of this course, the student should be prepared to:*

- develop a business plan to upgrade a dairy facility including building sites, stalls, selection of new equipment, calculating production costs, annual budgeting, estimating capacity and income to increase production, comfort, and profit.

B. **STUDENT LEARNING GOALS**  
*Mastery of the following learning goals will enable the student to achieve the overall course goal.*

1. **Required Learning Goals**  
*Upon satisfactory completion of this course, the student will be able to:*

   a. Explain and compare the changes that have been taking place in twentieth-century dairy farming.
   b. Identify the factors in planning or modernizing and operating a dairy.
   c. Identify methods of animal handling and housing features.
   d. Analyze various methods of financing a dairy.
   e. Prepare a budget and analyze costs.
   f. Explain and analyze milk marketing and government controls.
   g. Explain basic selection, feeding, breeding, and recordkeeping methods.
   h. Explain the options of milking centers, freestalls and bedding materials.
   i. Analyze the factors involved in selecting a dairy site.
   j. Evaluate the layout for manure management systems.
   k. Diagram and analyze a full year’s operation for a dairy including costs, income, cow/heifer numbers, feed needs, and other phases of planning and budgeting.
   l. Observe and explain various dairy management strategies based on participation in field trips.

2. **Lab Learning Goals**  
*Upon satisfactory completion of the lab portion of this course, the student will be able to:*

   a. Evaluate the cow comfort level of the herd.
   b. Develop a strategy for improvement of milk production, milk quality, and herd health.
   c. Determine the capacity of the dairy based on the design of the milking center.
   d. Identify proper facility requirements like lighting, ventilation, drainage, walking surfaces that promote health and production.
   e. Understand the importance and function of the milking center to deliver a quality dairy product to the consumer.
   f. Identify the requirements for manure management in regards to local, state, and federal requirements.
   g. Demonstrate familiarity of labor laws, FTE limits and production ratios per worker.
   h. Utilize various consultants, companies, and services in the acquisition of products and knowledge.
IV. METHODS OF ASSESSMENT (TYPICAL)

A. FORMATIVE ASSESSMENT

1. Examinations on lecture material.
2. Written analysis of dairies observed on field trips.
3. Participation in class discussion.

B. SUMMATIVE ASSESSMENT

1. Preparation of a dairy management plan.
2. Final exam.