COURSE DESCRIPTION

This course is offered every other year. It is designed for junior and senior students. The production phase of the dairy industry will be covered including animal selection, feeding, breeding, herd health, and management practices important to quality milk production. Laboratory period included. Prerequisites: AGR.110 and 312 or permission of Instructor.

I. OBJECTIVES

A. BODY OF KNOWLEDGE
   1. The importance of the dairy cattle industry and the value of milk in the human diet.
   2. The evolution of the dairy industry and development of dairy breeds.
   3. Presentation of milking machine systems and proper milking procedures.
   5. Reproductive management principles regarding genetic and economic progress in the dairy herd.
   6. Discussion of herd health and disease problems in dairy cattle.

B. SKILLS
   1. How records of milk production and breeding schedules are set up and utilized within the dairy herd.
   2. Proper selection guidelines and criteria in selecting bulls for use in AI to improve dairy cattle.
   3. Balancing complete rations that meet the daily nutrient requirements of dairy cattle for optimum milk production.
   4. Development of a herd health program with emphasis on sanitation and producing a wholesome dairy product.

III. ATTITUDES AND VALUES
   1. Appreciation of the role of dairy cattle in converting forage, pastureland, and grain by-products into usable products for human consumption.
   2. Receiving first-hand from field trip visits, successful management practices, ideas, and views of dairy operators.

TEXTBOOK: Dairy Cattle Science, by Tyler and Ensminger

DAIRY REFERENCES
Dairy Cattle Principles, Practices, Problems, and Profits, Foley
Principles of Dairy Science, Schimdt and Van Fleck
Journal of Dairy Science

Revised Fall 2005
DAIRY PERIODICALS
Hoard's Dairyman
Dairy Herd Management
Holstein World

CONTENT OUTLINE

I. Dairy Cattle in the U.S. and World
   Importance of dairy industry
   Milk in the human diet
   Dairy beef; veal production

II. Business Management Decisions in the Dairy Industry
   Business arrangements
   Investment in facilities and equipment
   Setting goals

III. Dairy Breeds and Their Importance--Housing
   Facilities
   Breeds and their history
   Free-stalls; tie-stalls and loose housing

IV. Anatomy and Physiology of Lactation
   General Endocrinology in Dairy Cattle
   Hormonal Control of Lactation
   Milking practices
   Biosynthesis of milk

V. Milking Machines and Milking Systems
   Rate of milking
   Pipeline, bucket, and parlor milking
   Quality milk production

VI. Udder and Non-infectious Diseases
    Mastitis
    Edema

VII. Breeding Management and genetic Progress thru AI
    Reproductive anatomy, heat detection and calving intervals
    Heat detection and use of superior bulls
    Superovulation and milk without motherhood

VIII. Feeding Dairy Cattle for Economical Production
   Digestive anatomy
   Forages and concentrates
   Feedstuff preparation and ration balancing

IX. Nutrient Requirements
    Energy and protein requirements
    Minerals and Vitamins

X. Feeding The Milking Herd
   Formulating rations
   Feed Additives
   Feeding methods

XI. Raising Dairy Herd Replacements
    Care of the Cow and Calf at Calving
    Raising the dairy calf
    Heifer feeding and Management
XII. Records Use in Dairy Management
   Dairy Herd Improvement Associations (DHIA)
   Pedigrees, breeding records, health records
   Labor management

XIII. Herd Health
   Herd health program
   Infectious Diseases
   Parasitic Diseases
   Metabolic Diseases

XIV. Milk Products
   Processing and Marketing

LABORATORY WORK
   Field trips will be conducted to local beef enterprises and industry related organizations. These outings are provided to give you first-hand experiences in the area of beef feeding, breeding, management and industry activities. A lab write-up describing the learning experiences of each trip will be due one week following the activity. All late papers should be expected to be graded at 70% of original value. If for any reason you are unable to participate in a lab please review an appropriate article from the Journal of Animal Science or Journal of Dairy Science of 4-5 pages in length plus proper references.
   One such paper is assigned for each farm visit missed.

COURSE EVALUATION
   The final course grade will be evaluated according to the following:

   First Exam  25%
   Second Exam  25%
   Final Exam  25%
   Laboratory and Class Assignments  25%

   All papers submitted late are subject to be penalized 30% of grade. Those submitted after one week overdue will receive no grade. Questions are invited and encouraged at anytime throughout the lecture and lab. Students wishing help for any reason should feel free to contact the instructor.

Professor - Harold Thirey, Agriculture Department, Wilmington College
Pyle Center Box 1305   Wilmington, Ohio 45177   Office: Kettering 306   Ext. 396
Office Hours - Mornings when not in class.

Lecture - 9:10 - 10:25 A.M. Tuesday/Thursday
Lab - 1:00 P.M. Tuesday

Attendance/Absence Policy - Three unexcused absences will result in a grade reduction.

Penalty for Academic Dishonesty - All college policies regarding plagiarism and cheating will apply.