

# AGRICULTURE DAIRY OPTION

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2009 – 2010

18 Months

Credits Required for Graduation: 77

Associate of Applied Science (A.A.S.) Degree

## The Dairy Industry Needs You

Research shows that the current number of dairy operators in the Midwest has declined by fifty-four percent. Factors contributing to this decline includes the amount of capital required to start a dairy, the shortage of trained employees, the difficulty of meeting government regulations, and the lack of current technology and knowledge to make the transition to modern dairy practices. Yet, the need for producers and milk production is growing at a much faster rate than what current dairies can supply.

In order to prosper in the dairy industry today, dairy operators will need to consider evolving into a larger scale operation. Unfortunately, one of the biggest obstacles facing many dairy farmers today is the lack of trained labor to help them with their expansion. The Agriculture Dairy Option is designed to educate and train individuals for a career in the dairy industry.

## You'll Get What You Need

When students complete the Agriculture Dairy Option they will be competent in the skills needed to be employed by or even manage a large state-of-the-art dairy operation. Students will be proficient in the areas of animal and dairy science, health and nutrition. They will be able to troubleshoot problem areas in the dairy herd and learn about farm management and commodity marketing. Whether students are returning to a family-owned dairy operation or employed by large corporations, the skills they learn in the dairy option program will be rewarding and profitable.

## Are You A Candidate for the Dairy Option?

If you are the type of individual who enjoys working outdoors, has a genuine respect for animals, and has the managerial skills necessary to own and/or operate a successful business, this may be the career for you. With the demand for producing a higher quantity and quality of milk, the dairy operator must be able to make educated decisions about production, nutrition, and health. Most importantly, he or she must be able to keep accurate and consistent records on the dairy herd.

## Recommended Background Courses

Although not required, the following courses would be beneficial to this course of study prior to attending Lake Area Technical Institute: Ag Courses, Accounting, Computer, Biology, Science, English.

## COURSE DESCRIPTIONS

**AED 100 – Automated External Defibrillator (.5 credit)** To prepare individuals in the workplace to provide care for breathing emergencies, perform cardiopulmonary resuscitation (CPR), and use an automated external defibrillator (AED) for victims of sudden cardiac arrest.

**AG 100 – Soils (3 credits)** Determination of properties of various soils and their suitability for agricultural uses. Hands-on soil sampling and testing are emphasized; also, development of proficiency in interpreting soil survey maps.

**AG 102 – Crop Science (3 credits)** A comprehensive review of the plant development cycle, from seedling to harvest-ready maturity. Appropriate environmental conditions, insect and disease control, harvesting, and storage are discussed. Profitable management is emphasized.

**AG 106 – Animal Health I (2 credits)** The causes and management/control of disease and poisoning are determined.

**AG 158 – Farm/Ranch Records (2 credits)** Application of standard financial procedures, using the computer to record, compile and complete typical financial records for farming operations.

**AG 200 – Animal Nutrition (2 credits)** A comprehensive class dealing with general principles of animal nutrition.

**AG 216 – Farm Power/Electrical Wiring (1 credit)** Covers electrical terms, circuits, design, usage, grounding, codes for wiring farm buildings and equipment, and how to troubleshoot electrical problems. AGR 218 taken concurrently.

**AG 218 – Advanced Electrical Wiring (2 credits)** This course covers service entrance panels; switching and outlet circuits; 120-volt and 240-volt single-phase power; 240-volt three-phase power; conductors and circuit protection; EMT circuits and workmanship and code compliance. AGR 216 taken concurrently.

**AG 221 – Machinery Management (2 credits)** A discussion of tractor setup, balance, and field performance; combine adjustment and field performance; machinery economics such as ownership, leasing, and investment.

**AG 226 – Commodity Marketing (2 credits)** Maximizing farm profit: Using the futures market; hedging; avoiding dangers of speculation; participating in the options market; developing a personal market strategy.

**AG 228 – Advanced Marketing (2 credits)** Discussion of risk minimization through selected marketing procedures.

**AGR 101 – Basic Animal Husbandry (4 credits)** This course will teach the student how to properly handle and work large animals. Topics will include types of restraints, working facilities, dehorning, castration, along with animal rights.

**AGR 103 – Breeding Practices (3 credits)** This course will teach the student the various breeding practices used on large animals. Topics covered are heat detection, synchronization, herd reproductive health, and proper selection of sires. Artificial insemination (hands on) will be covered every other year.

**AGR 110 – Animal Science (3 credits)** The history and development of the livestock industry in South Dakota as well as selection and management of breeding stock, animal health, housing requirements and marketing strategies.

**AGR 157 – Dairy Supervised Occupational Experience (SOE) (4 credits)** Students will be provided the opportunity to gain hands-on practical experience through an internship on a local commercial dairy operation. Primary areas of focus will be dairy herdsmanship, milking, feeding, calf care, and general farm duties.

**AGR 170 – Dairy Science (2 credits)** The history and development of the dairy industry in South Dakota as well as selection and management of breeding stock, animal health, housing requirements, and marketing strategies.

**AGR 201 – Animal Medical Terminology (Veterinary) (2 credits)** This course will familiarize the student with medical terminology used within the large animal field. The student will be able to understand, pronounce, and break down medical terms into their prefix, root, and suffix. The student will also be able to describe the major systems of the body, their organs, and function within the body.

**AGR 203 – Animal Phlebotomy/Sample Collection (4 credits)** This course will teach the student on the proper procedures used to collect blood, fecal, urine, respiratory, and necropsy samples from large animals. Also the student will learn how to use the various types of equipment used to collect these samples.

**AGR 204 – Animal Health II (2 credits)** Designed to familiarize students with animal diseases, health products and feed additives.

**AGR 205 – Treatment of Animal Injuries (2 credits)** This course will show the student how to properly care for injuries that might occur to animals. Topics will be signs to look for, proper cleaning, dressing, and care of injuries.

**AGR 209 – Biologics and Pharmaceutical Administration (2 credits)** This course will teach the student the proper injection sites and procedures used for large animals. Proper handling and storage of drugs will also be covered.

**AGR 211 – Animal Anatomy (4 credits)** This course will familiarize the student with the different parts of the animal body (cattle, swine, horse, sheep). Students will look at the skeletal, muscle, respiratory, digestive, and reproductive systems and identify them.

**AGR 244 – Supervision (2 credits)** Development of knowledge and skills in planning, organization, communication, motivation and leadership. An important course for anyone, especially in the business world.

**AGR 255 – Dairy Herd Management I (2 credits)** This course will teach strategies concerning the profitable care and management of the dairy herd. Primary focus of this course will be on calf and heifer management, dry cow, and transition cow management. Topics covered include newborn calf care and colostrum management, calf feeding guidelines, dry period management, calving management, and care of the fresh cow.

**AGR 256 – Dairy Herd Management II (2 credits)** This course prepares students to make informed decisions and troubleshoot situations both before and as they arise based on specific monitors and observations in the dairy herd environment. Topics covered include feed bunk management, forage quality, feeding for components, cow grouping and stocking densities, heat stress, manure management, biosecurity risk management, culling options, monitoring reproductive records, and labor relations

**AGR 257 – Milk Production (2 credits)** This course is primarily designed to acquaint students with milk production, secretion, and composition so that they may better understand its association with proper milking techniques and milk quality. Topics include udder anatomy, mammary growth and development, milk synthesis and secretion, milk quality and mastitis, milking systems and equipment, DHIA and production records, and milk grades and pricing.

**AGR 258 – Basic Dairy Spanish (2 credits)** Covers the basic fundamentals of the Spanish language as a foundation on which to further develop their Spanish speaking skills. After learning the fundamentals, students will be introduced to words and phrases commonly used in the dairy industry. This will enable them to communicate more effectively with Hispanic workers in their work environment and help to develop stronger and more effective employee/employer communications. Students will also study cultural differences and social protocol.

**AGR 259 – Dairy Supervised Occupational Experience (SOE) (4 credits)** Students will be provided the opportunity to gain hands-on practical experience through an internship on a local commercial dairy operation. Primary areas of focus will be dairy herdsmanship, milking, feeding, calf care, and general farm duties.

**CIS 102 – Windows Applications for Technicians (3 credits)** Using a Windows-based microcomputer and related software, you will gain an understanding and basic operational knowledge about the Windows XP operating system, Microsoft Office word processing, and spreadsheets, presentation software, and publishing software. You will demonstrate this knowledge by scoring at least 80% on assignments, related objective, and performance tests.

**HAZ 100 – Hazardous Materials Safety (.5 credit)** Hazardous material covers identifying types of hazardous material, demonstrating personal protective equipment, and identifying blood borne pathogens.

#### **Agriculture Electives (Choose Two)**

**AG 224 – Facilities (2 credits)** Introduction to facility planning and design. Includes analysis of EPA regulation pertaining to on-farm fuel storage, chemical and fertilizer storage/handling, and livestock waste management.

**AG 226 – Commodity Marketing (2 credits)** Maximizing farm profit: Using the futures market; hedging; avoiding dangers of speculation; participating in the options market; developing a personal market strategy.

**AGR 202 – Livestock Nutrition Problems (2 credits)** Application of principles discussed in AGR 200: evaluation and formulation of suitable rations. Computers are used in this process.

**To fulfill graduation requirements, students must select one course in each of the areas listed. Courses marked with an asterisk can be transferred directly to the university system under the terms of articulation agreements.**

#### **Behavioral Science**

PSYC 100 – Psychology of Human Relations  
PSYC 101 – General Psychology \*

#### **Communications**

SPCM 101 – Fundamentals of Speech \*  
ENGL 101 – Composition \*  
COMM 101 – Contemporary Communication

#### **Mathematics**

MATH 100 – Applied General Math  
MATH 101 – Intermediate Algebra  
MATH 102 – College Algebra \*

#### **Social Science**

ECON 101 – Economic Geography  
ECON 105 – Leadership in the Global Workplace  
ECON 201 – Principles of Microeconomics I \*  
ECON 202 – Principles of Macroeconomics II \*  
SOC 100 – Introduction to Sociology \*