

Career Technical Student Organizations, when provided, shall be an integral part of the vocational instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.064, FAC.

This program may be offered in PSAV courses. Vocational credit shall be awarded to the student on a transcript in accordance with Section 230.643, F.S.

Planned and supervised instructional activities must be provided through one or more of the following: (1) directed laboratory experience, (2) student projects, (3) placement for experience, (4) cooperative experience.

Because of the production and marketing cycle of the animal industry, this program requires individual instruction and supervision of students for the entire period beyond the 180-day school year.

The cooperative method of instruction is appropriate for this program. Whenever the cooperative method is offered, the following are required for each student: a training plan that is signed by the student, teacher, and employer, including instructional objectives and a list of on-the-job and in-school learning experiences and a workstation that reflects the equipment, skills, and tasks that are relevant to the occupation that the student has chosen as a career goal. The student must be paid for work performed.

In accordance with Rule 6A-10.040, FAC, the minimum basic-skills grade levels required for postsecondary adult vocational students to exit the program are listed on the front page of this curriculum framework. These grade-level numbers correspond to grade-equivalent scores obtained on one of the state-designated basic-skills examinations. If a student does not meet the basic-skills level required for completion of the program, remediation should be provided concurrently in Vocational Instructional Preparation (VIP). Please refer to the Rule for exemptions.

When a secondary student with a disability is enrolled in a vocational class with modifications to the curriculum framework, the particular outcomes and student performance standards which the student must master to earn credit must be specified on an individual basis. The job or jobs for which the student is being trained should be reflected in the student's desired post school outcome statement on the Transition Individual Educational Plan (Transition IEP).

SCANS Competencies: Instructional strategies for this program must include methods that require students to identify, organize, and use resources appropriately; to work with each other cooperatively and productively; to acquire and use information; to understand social, organizational, and technological systems; and to work with a variety of tools and equipment. Instructional strategies must also incorporate the methods to improve students' personal qualities and high-order thinking skills.

Equipment List: A generic equipment list is available for this program and is printed in a supplement to this document.

July 2001

Florida Department of Education
INTENDED OUTCOMES

Program Title: Animal Science and Services Program

INTENDED OUTCOMES: After successfully completing appropriate course(s) for each occupational completion point of this program, the student will be able to perform the following:

OCCUPATIONAL COMPLETION POINT - DATA CODE A

FARMWORKER, GENERAL - DOT Code 421.687-010

- 01.0 Describe the socioeconomic role of the agricultural industry.
- 02.0 Apply scientific and technological principles to the agricultural industry.
- 03.0 Practice agricultural safety.
- 04.0 Demonstrate the use of tools, equipment and instruments in the agricultural industry.
- 05.0 Describe the principles of integrated pest management (IPM).
- 06.0 Describe the principles of plant and/or animal growth and reproduction.
- 07.0 Apply business skills and economic principles to the agricultural industry.
- 08.0 Explain the basic marketing processes in the agricultural industry.
- 09.0 Demonstrate human-relations, communications, and leadership skills.
- 10.0 Describe animal science and the role of animals in society.
- 11.0 Identify careers in the animal industry.
- 12.0 Practice animal and laboratory safety.
- 13.0 Demonstrate basic first aid for humans.
- 14.0 Identify parts and functions of various systems of selected animals.
- 15.0 Recognize normal and abnormal animal behaviors.
- 16.0 Identify the different digestive systems of animals and the nutritional requirements of selected species.
- 17.0 Explain the reproductive system and breeding of selected animals.
- 18.0 Demonstrate knowledge of preventive medicine and disease control.
- 19.0 Describe the internal and external parasites and the control methods.
- 20.0 Differentiate between animal welfare and animal rights.
- 21.0 Demonstrate knowledge of animal control and humane societies.
- 22.0 Discuss animal marketing techniques.
- 23.0 Demonstrate employability and interpersonal skills.
- 24.0 Maintain and analyze records.

OCCUPATIONAL COMPLETION POINT - DATA CODE B

FARMWORKER, LIVESTOCK - DOT Code 410.664-010

- 25.0 Apply approved nutritional practices.
- 26.0 Groom, exhibit, and market animals.
- 27.0 Maintain equipment and facilities.
- 28.0 Operate, maintain, and repair machinery and equipment.
- 29.0 Maintain and analyze records.
- 30.0 Apply animal health practices.
- 31.0 Perform emergency first aid on animals.

OCCUPATIONAL COMPLETION POINT - DATA CODE C

LIVESTOCK RANCHER - DOT Code 410.161-018

- 32.0 Identify, select, and breed food-producing animals.
- 33.0 Plan routine management of food-producing animals and facilities.
- 34.0 Grow and maintain pasture and forage crops.
- 35.0 Identify and interpret rules and regulations affecting the livestock industry.

**Florida Department of Education
STUDENT PERFORMANCE STANDARDS**

Program Title: Animal Science and Services
Secondary Number: 8106200
Postsecondary Number: A010312

OCCUPATIONAL COMPLETION POINT - DATA CODE A

FARMWORKER, GENERAL - DOT Code 421.687-010

01.0 DESCRIBE THE SOCIOECONOMIC ROLE OF THE AGRICULTURAL INDUSTRY--The student will be able to:

- 01.01 Prepare a report on the history of the agricultural industry.
- 01.02 Discuss the impact of agricultural products and services on the local, state, national, and global economy.
- 01.03 Investigate career opportunities in the agricultural industry and identify educational experiences necessary to prepare for those careers.
- 01.04 Discuss the role of the agricultural industry in the interaction of population, food, energy, and the environment.

02.0 APPLY SCIENTIFIC AND TECHNOLOGICAL PRINCIPLES TO THE AGRICULTURAL INDUSTRY--The student will be able to:

- 02.01 Discuss the importance of scientific classification in agriculture.
- 02.02 Use the scientific method to solve problems in agriculture.
- 02.03 Explain the use of genetics in agriculture, including probability applications.
- 02.04 Analyze the impact of recent technology on the agricultural industry.
- 02.05 Identify and describe the components of an ecosystem both biotic and abiotic.
- 02.06 Construct and analyze a diagram of a biological food web and subsequent food chains.
- 02.07 Describe and diagram the water, carbon, nitrogen, oxygen, sulfur, and phosphorus cycles.
- 02.08 Evaluate soil profiles, land-capability classes, and soil conservation practices.
- 02.09 List the components of Florida's fresh water systems (lakes, ground water, aquifer, sink holes, rivers, and swamps) and explain the importance of managing these resources.
- 02.10 Explain the interaction of one natural resource with another.
- 02.11 Describe the causes and effects of air, water, and land pollution and identify ways to prevent pollution.
- 02.12 Explain the flow of energy from the sun through agricultural systems.
- 02.13 Describe the environmental requirements necessary for a productive natural or man-made aquaculture system.
- 02.14 Apply principles of waste management to environmental problems common to agricultural systems.

- 02.15 Understand the concept of best management practices (BMP) as applied to agriculture.
 - 02.16 Identify advances in biotechnology impacting agriculture, such as transgenic crops and biological controls.
 - 02.17 Identify computer technology advances such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS).
- 03.0 PRACTICE AGRICULTURAL SAFETY--The student will be able to:
- 03.01 List the most common causes of agricultural accidents.
 - 03.02 Discuss the importance of following proper safety precautions in the agricultural industry.
 - 03.03 Demonstrate safety procedures in the classroom, laboratory, and workplace.
 - 03.04 Describe symptoms of pesticide poisoning.
 - 03.05 Extract pertinent information from a pesticide label and Material Safety Data Sheet (MSDS).
 - 03.06 Select, mix, and apply a nonrestricted chemical, according to the label and according to Environmental Protection Agency (EPA), MSDS, and Worker Protection Standard regulations.
 - 03.07 Clean and store pesticide application equipment, safety clothing, and safety equipment.
 - 03.08 Identify the proper disposal of containers and residual pesticides.
 - 03.09 Discuss the proper procedures of basic first aid and cardiopulmonary resuscitation (CPR).
- 04.0 DEMONSTRATE THE USE OF TOOLS, EQUIPMENT AND INSTRUMENTS IN THE AGRICULTURAL INDUSTRY--The student will be able to:
- 04.01 Choose the proper tools, equipment, and instruments for a specific job.
 - 04.02 Describe the principles of selected mechanical applications (e.g. levers, pulleys, hydraulics, internal combustion).
 - 04.03 Calibrate spray equipment; solve time, distance, area, volume ratio, proportion, and percentage problems in agriscience.
 - 04.04 Demonstrate the ability to use an equipment manual.
 - 04.05 Demonstrate the use of selected tools, equipment, and instruments.
 - 04.06 Service, maintain, and store tools, equipment, instruments, and supplies.
- 05.0 DESCRIBE THE PRINCIPLES OF PEST MANAGEMENT --The student will be able to:
- 05.01 Identify types of pests and beneficials.
 - 05.02 Identify and select an appropriate control for each type of pest and/or weed.
 - 05.03 Describe the principles and benefits of integrated pest management.
- 06.0 DESCRIBE THE PRINCIPLES OF PLANT AND/OR ANIMAL NUTRIENT GROWTH AND REPRODUCTION--The student will be able to:

For plant:

- 06.01 Describe the structure functions of plant parts including roots, stems, leaves, and flowers.
- 06.02 Describe the processes of plant growth including photosynthesis, respiration and nutrient uptake.
- 06.03 Propagate plants through sexual and asexual means.
- 06.04 Identify the nutrients required for plant growth and development and the role of each.
- 06.05 Extract pertinent information from a fertilizer label.

For animal:

- 06.07 Identify the nutrients required for animal growth and development and the role of each.
- 06.08 Identify and describe the anatomical systems of animals and the functions of each, including major components.
- 06.09 Describe the process of animal reproduction.

07.0 APPLY BUSINESS SKILLS AND ECONOMIC PRINCIPLES TO THE AGRICULTURAL INDUSTRY--The student will be able to:

- 07.01 Explain the basic economic principles in the agricultural industry.
- 07.02 Explain the importance and impacts of local, state, and federal regulations and required documentation affecting the agricultural industry.
- 07.03 Describe the types of agribusiness by organizational structure (i.e. sole proprietorship, partnership, corporation, cooperatives).
- 07.04 Select and use computer applications.
- 07.05 Analyze and interpret agribusiness data.
- 07.06 Keep and maintain supervised agricultural experience (SAE) records.
- 07.07 Interpret legal descriptions of land.

08.0 EXPLAIN THE BASIC MARKETING PROCESSES IN THE AGRICULTURAL INDUSTRY--The student will be able to:

- 08.01 Describe key factors in marketing agricultural products.
- 08.02 Select agricultural products according to grades and standards.

09.0 DEMONSTRATE HUMAN-RELATIONS, COMMUNICATIONS, AND LEADERSHIP SKILLS--The student will be able to:

- 09.01 Demonstrate acceptable work habits and attitudes.
- 09.02 Correctly follow oral and written directions and ask questions that clarify directions, as needed.
- 09.03 Communicate effectively in verbal, written, and nonverbal modes.
- 09.04 Recognize and demonstrate good listening skills.
- 09.05 Conduct small informal and formal group meetings.
- 09.06 Identify the opportunities for leadership development available through an appropriate student and/or professional organization.

- 09.07 Recognize and demonstrate communications skills
in the workplace.
- 09.08 Demonstrate effective telephone skills.
- 10.0 DESCRIBE ANIMAL SCIENCE AND THE ROLE OF ANIMALS IN SOCIETY--The student
will be able to:
- 10.01 Describe animal science.
- 10.02 Describe the role of animals in society.
- 10.03 Locate and obtain informational materials on animal-related
topics or issues.
- 11.0 IDENTIFY CAREERS IN THE ANIMAL INDUSTRY--The student will be able to:
- 11.01 Locate and obtain information on animal-industry careers and
career opportunities.
- 11.02 Describe various careers in the animal industry.
- 11.03 Describe training requirements for entry and advancement in
animal-industry careers.
- 11.04 Identify professional organizations and trade journals in the
animal industry.
- 12.0 PRACTICE ANIMAL AND LABORATORY SAFETY--The student will be able to:
- 12.01 Practice safe procedures when working with animal-related
equipment and in laboratory settings.
- 12.02 Practice safety precautions around animals.
- 12.03 Discuss the impact of unsafe procedures.
- 12.04 Define zoonosis.
- 12.05 Describe selected zoonotic diseases.
- 12.06 Discuss OSHA as it relates to the animal industry.
- 13.0 DEMONSTRATE BASIC FIRST AID FOR HUMANS--The student will be able to:
- 13.01 Locate and use a first aid kit.
- 13.02 Recognize allergic reactions.
- 13.03 Describe proper use of eye wash solution.
- 13.04 Control minor hemorrhage and/or trauma.
- 13.05 Practice emergency procedures.
- 14.0 IDENTIFY PARTS AND FUNCTIONS OF VARIOUS SYSTEMS OF SELECTED ANIMALS--The
student will be able to:
- 14.01 Identify parts of the skeletal system of selected animals.
- 14.02 Compare human skeletal system to that of other animals.
- 14.03 Identify parts and functions of the following systems of
selected animals:
- respiratory system
- urinary system
- digestive system
- cardiovascular system
- reproductive system
- nervous system

- 14.04 Employ correct terminologies for the variety of animal species and conditions within those species.
- 15.0 RECOGNIZE NORMAL AND ABNORMAL ANIMAL BEHAVIORS--The student will be able to:
- 15.01 Distinguish between instinctive and learned behaviors.
- 15.02 Recognize normal and abnormal behavioral characteristics of animals through observations.
- 15.03 Recognize signs of aggressive animal behaviors.
- 15.04 Identify behavioral problems.
- 16.0 IDENTIFY THE DIFFERENT DIGESTIVE SYSTEMS OF ANIMALS AND THE NUTRITIONAL REQUIREMENTS OF SELECTED SPECIES--The student will be able to:
- 16.01 Differentiate between ruminants and non-ruminants.
- 16.02 Differentiate between omnivorous, carnivores, and herbivores.
- 16.03 Describe the basic nutritional requirements of selected species.
- 16.04 Analyze different food labels.
- 16.05 Formulate animal food products.
- 16.06 Schedule feeding times for selected animals.
- 17.0 EXPLAIN THE REPRODUCTIVE SYSTEM AND BREEDING OF SELECTED ANIMALS--The student will be able to:
- 17.01 Describe the male and female reproductive systems.
- 17.02 Determine sex of animals.
- 17.03 Determine appropriate age for breeding.
- 17.04 Identify gestation length.
- 17.05 Describe estrous cycle.
- 17.06 Describe breeding techniques.
- 17.07 Select male and female for breeding.
- 17.08 Care of breeding stock.
- 17.09 Care of newborn.
- 17.10 Explain the differences and similarities between reproduction in animal species.
- 18.0 DEMONSTRATE KNOWLEDGE OF PREVENTIVE MEDICINE AND DISEASE CONTROL--The student will be able to:
- 18.01 Describe the importance of preventive medicine for animal health.
- 18.02 Recognize healthy animals.
- 18.03 Describe common diseases of animals.
- 18.04 Describe vaccinations available for disease prevention and vaccination procedures.
- 18.05 Evaluate and report health conditions of animals.
- 18.06 Collect urine and feces samples for analysis.
- 18.07 Describe the process for collecting blood samples for analysis.
- 18.08 Administer prescribed oral medications.
- 18.09 Describe the process for administering medications by injection.
- 18.10 Describe the procedure for safe disposal of medications.

- 18.11 Discuss the term immunology and active and passive immunity.
- 18.12 Describe procedures for periodic health check-up.

- 19.0 DESCRIBE INTERNAL AND EXTERNAL PARASITES AND CONTROL METHODS--The student will be able to:
 - 19.01 Describe the internal and external parasites of selected animals.
 - 19.02 Describe the methods of parasite prevention.
 - 19.03 Describe the methods of parasite control.
 - 19.04 Use a microscope for selected practices.
 - 19.05 Describe the process for fecal sample collection, slide preparation, and examination.

- 20.0 DIFFERENTIATE BETWEEN ANIMAL WELFARE AND ANIMAL RIGHTS--The student will be able to:
 - 20.01 Define animal welfare and animal rights.
 - 20.02 Explain the differences between animal welfare and animal rights.
 - 20.03 Identify animal welfare and animal rights advocate groups.
 - 20.04 Debate current events concerning animal welfare and animal rights.
 - 20.05 Describe animal cruelty and the consequences of cruel treatment of animals.

- 21.0 DEMONSTRATE KNOWLEDGE OF ANIMAL CONTROL AND HUMANE SOCIETIES--The student will be able to:
 - 21.01 Differentiate between animal control agencies and humane societies.
 - 21.02 Describe the responsibilities and goals of animal control agencies and humane societies.
 - 21.03 Explain the laws governing each organization.
 - 21.04 Identify and locate local animal control agencies and humane societies.

- 22.0 DISCUSS ANIMAL MARKETING TECHNIQUES--The student will be able to:
 - 22.01 Demonstrate procedures for preparing, maintaining, and exhibiting animals.
 - 22.02 Collect and interpret market reports and identify market outlets for companion and food-producing animals.

- 23.0 DEMONSTRATE EMPLOYABILITY AND INTERPERSONAL SKILLS--The student will be able to:
 - 23.01 Demonstrate acceptable employee hygiene habits.
 - 23.02 Demonstrate appropriate responses to criticisms from employer, supervisor, and peers.
 - 23.03 Complete pertinent forms for employment, such as resume, job applications, W-4 forms.
 - 23.04 Demonstrate job interview techniques.
 - 23.05 Explain the "Right-to-Know" law.

24.0 MAINTAIN AND ANALYZE RECORDS--The student will be able to:

- 24.01 Maintain and analyze animal records.
- 24.02 Discuss the legal requirements of maintaining animal health records, and maintain and analyze animal health records.
- 24.03 Maintain and analyze basic business records (inventory, depreciation, receipts, and expenses) using computer applications.
- 24.04 Maintain supervised agricultural experience (SAE) records.

OCCUPATIONAL COMPLETION POINT - DATA CODE B

FARMWORKER, LIVESTOCK - DOT Code 410.664-010

25.0 APPLY APPROVED NUTRITIONAL PRACTICES--The student will be able to:

- 25.01 Evaluate animal feed and feeding systems
- 25.02 Measure and add medication to feed as prescribed.
- 25.03 Determine amount to feed individual animals.
- 25.04 Balance a feed ration.

26.0 GROOM, EXHIBIT AND MARKET ANIMALS--The student will be able to:

- 26.01 Groom selected animals for exhibition.
- 26.02 Train animals for show and/or exhibition.
- 26.03 Show and exhibit animals.
- 26.04 Demonstrate knowledge required to train selected animals to halter.
- 26.05 Weigh animals.
- 26.06 Prepare animals for transport.
- 26.07 Identify market outlets.
- 26.08 Describe methods of restraining, loading, handling, and transporting animals safely.
- 26.09 Collect and interpret market reports.
- 26.10 Determine market grades of animals and animal products.
- 26.11 Analyze shipping and health certificates.

27.0 MAINTAIN EQUIPMENT AND FACILITIES--The student will be able to:

- 27.01 Clean and disinfect pens, cages, feeders, waterers, trailers and other equipment.
- 27.02 Dispose of animal residue and waste.
- 27.03 Clean and maintain equipment and instruments.
- 27.04 Repair and maintain pens, cages and other facilities and structures.
- 27.05 Perform maintenance and minor repair of electrical and plumbing fixtures and equipment.
- 27.06 Maintain a clean, sanitary and healthy environment for animals.

28.0 OPERATE, MAINTAIN, AND REPAIR MACHINERY AND EQUIPMENT--The student will be able to:

- 28.01 Use equipment-operator and repair manuals.
- 28.02 Service and maintain small gasoline engines.

- 28.03 Operate, service, and maintain tractors and equipment.
- 28.04 Maintain records of equipment maintenance and repair.
- 28.05 Prepare equipment for storage.
- 28.06 Demonstrate proper use of shop and lab equipment.
- 28.07 Demonstrate safety practices in operating machinery and equipment.

29.0 MAINTAIN AND ANALYZE RECORDS--The student will be able to:

- 29.01 Maintain and analyze production, performance and breeding records, using computer applications.
- 29.02 Identify major sources of credit.
- 29.03 Evaluate leasing and renting agreements.
- 29.04 Evaluate need for liability and other insurance.
- 29.05 Analyze records to determine efficiency of operation.
- 29.06 Maintain machinery, equipment and facilities inventory records.
- 29.07 Maintain breeding records.
- 29.08 Prepare an annual budget.
- 29.09 Maintain and analyze basic business records (inventory, depreciation, receipts, and expenses) using computer applications.
- 29.10 Plan a work schedule.
- 29.11 Maintain personnel and labor records.
- 29.12 Maintain supervised agricultural experience records.
- 29.13 Discuss the legal requirements of maintaining animal health records, and maintain and analyze health records.
- 29.14 Maintain chemical-use and water-use records, etc.

30.0 APPLY ANIMAL HEALTH PRACTICES--The student will be able to:

- 30.01 Evaluate and report common ailments of animals (diseases, disorders associated with feeding, stress, internal and external parasites).
- 30.02 Administer prescribed oral medications (under supervision).
- 30.03 Administer prescribed injections (under supervision).
- 30.04 Locate injection points of selected animals (under supervision).
- 30.05 Sterilize instruments and supplies.
- 30.06 Interpret and follow directions on medications and animal health aids, including withholding milk from cows on medication and the control of mastitis.
- 30.07 Dip, spray, or dust animals for external parasites (under supervision).
- 30.08 Dispose of empty chemical and medical containers as prescribed.
- 30.09 Dispose of deceased animals as prescribed.
- 30.10 Store medications and chemicals safely and securely.
- 30.11 Select and administer growth stimulants and implants (under supervision).
- 30.12 Discuss castration, dehorning, docking, and debeaking.
- 30.13 Dispose of biomedical waste and by products (needles, scalpel blades, medicines, etc.)

31.0 PERFORM EMERGENCY FIRST AID ON ANIMALS--The student will be able to:

- 31.01 Evaluate the health status of the animals.
- 31.02 Isolate injured animals.
- 31.03 Cleanse wounds.
- 31.04 Apply antiseptic.
- 31.05 Immobilize fractured limbs.
- 31.06 Identify and stop external bleeding.
- 31.07 Seek additional medical attention for animals when required.

OCCUPATIONAL COMPLETION POINT - DATA CODE C

LIVESTOCK RANCHER - DOT Code 410.161-018

32.0 IDENTIFY, SELECT, AND BREED FOOD-PRODUCING ANIMALS--The student will be able to:

- 32.01 Appraise animal conformation and desirable characteristics and breeds.
- 32.02 Determine age to breed selected animals.
- 32.03 Describe estrous cycle of food-producing animals.
- 32.04 Describe breeding techniques, including artificial insemination.
- 32.05 Cull offspring.
- 32.06 Describe basic animal genetics.
- 32.07 Identify signs of parturition.
- 32.08 Identify common disorders of parturition.
- 32.09 Prepare animals and facilities for parturition.
- 32.10 Assist in the delivery of newborn animals.

33.0 PLAN ROUTINE MANAGEMENT OF FOOD-PRODUCING ANIMALS AND FACILITIES--The student will be able to:

- 33.01 Schedule feeding and care of animals.
- 33.02 Order supplies and animal feeds.
- 33.03 Develop training and exercise schedule for animal.
- 33.04 Plan for routine maintenance of equipment and facilities.
- 33.05 Assist in the planning of a routine animal health and preventative medication program.
- 33.06 Implement and maintain sanitary conditions for animals, including young.
- 33.07 Separate non-compatible animals.
- 33.08 Observe animals on a regular basis for problems or stress.
- 33.09 Develop a calendar of operations for a selected animal operation.

34.0 GROW AND MAINTAIN PASTURE AND FORAGE CROPS--The student will be able to:

- 34.01 Compare pasture, forage and feed crop production and harvesting systems.
- 34.02 Assist in determining pasture and forage needs.
- 34.03 Take a soil sample and interpret results.
- 34.04 Describe soil and water conservation practices.
- 34.05 Determine range and pasture quality.
- 34.06 Prepare soil for feed, pasture and forage crops.
- 34.07 Plant and grow feed, pasture and forage crops.
- 34.08 Fertilize feed, pasture and forage crops.

- 34.09 Control noxious weeds and pests in crops.
- 34.10 Harvest forage and feed crops.
- 34.11 Store harvested feed and forage crops.
- 34.12 Assist in the development of a plan for the rotation of fields, pens and pastures.

35.0 IDENTIFY AND INTERPRET RULES AND REGULATIONS AFFECTING THE LIVESTOCK INDUSTRY--The student will be able to:

- 35.01 Maintain a file of current livestock rules and regulations.
- 35.02 Secure professional services and information.
- 35.03 Observe EPA pesticide use regulations.
- 35.04 Identify the procedures and requirements for obtaining a restricted use pesticide applicator's license.
- 35.05 Observe regulations regarding the use of medications and growth stimulants.
- 35.06 Observe state and federal regulations regarding brucellosis testing/eradication programs and other programs.
- 35.07 Identify applicable land-use and zoning regulations.
- 35.08 Identify agencies affecting land and wildlife utilization (e.g., DNR, DEP, EPA)
- 35.09 Identify agencies regulating employee/employer relations (e.g., OSHA).

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8106810
Course Title: Agriscience Foundations I
Course Credit: 1

COURSE DESCRIPTION:

This course was developed as a core and is designed to develop competencies in the areas of agricultural history; global importance of agriculture; career opportunities; applied scientific and technological concepts; ecosystems; agricultural safety; principles of integrated pest management; principles of plant and animal growth; economic principles; agricultural marketing; and human relations skills.

01.0 DESCRIBE THE SOCIOECONOMIC ROLE OF THE AGRICULTURAL INDUSTRY--The student will be able to:

- 01.01 Prepare a report on the history of the agricultural industry.
- 01.02 Discuss the impact of agricultural products and services on the local, state, national, and global economy.
- 01.03 Investigate career opportunities in the agricultural industry and identify educational experiences necessary to prepare for those careers.
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- 02.02 Use the scientific method to solve problems in agriculture.
- 02.03 Explain the use of genetics in agriculture, including probability applications.
- 02.04 Analyze the impact of recent technology on the agricultural industry.
- 02.05 Identify and describe the components of an ecosystem both biotic and abiotic.
- 02.06 Construct and analyze a diagram of a biological food web and subsequent food chains.
- 02.07 Describe and diagram the water, carbon, nitrogen, oxygen, sulfur, and phosphorus cycles.
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 - 03.07 Clean and store pesticide application equipment, safety clothing, and safety equipment.
 - 03.08 Identify the proper disposal of containers and residual pesticides.
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- 04.01 Choose the proper tools, equipment, and instruments for a specific job.
 - 04.02 Describe the principles of selected mechanical applications (e.g. levers, pulleys, hydraulics, internal combustion).
 - 04.03 Calibrate spray equipment; solve time, distance, area, volume ratio, proportion, and percentage problems in agriscience.
 - 04.04 Demonstrate the ability to use an equipment manual.
 - 04.05 Demonstrate the use of selected tools, equipment, and instruments.
 - 04.06 Service, maintain, and store tools, equipment, instruments, and supplies.
- 05.0 DESCRIBE THE PRINCIPLES OF PEST MANAGEMENT --The student will be able to:
- 05.01 Identify types of pests and beneficials.
 - 05.02 Identify and select an appropriate control for each type of pest and/or weed.
 - 05.03 Describe the principles and benefits of integrated pest management.
- 06.0 DESCRIBE THE PRINCIPLES OF PLANT AND/OR ANIMAL NUTRIENT GROWTH AND REPRODUCTION--The student will be able to:

For plant:

- 06.01 Describe the structure functions of plant parts including roots, stems, leaves, and flowers.
- 06.02 Describe the processes of plant growth including photosynthesis, respiration and nutrient uptake.
- 06.03 Propagate plants through sexual and asexual means.
- 06.04 Identify the nutrients required for plant growth and development and the role of each.
- 06.05 Extract pertinent information from a fertilizer label.

For animal:

- 06.07 Identify the nutrients required for animal growth and development and the role of each.
- 06.08 Identify and describe the anatomical systems of animals and the functions of each, including major components.
- 06.09 Describe the process of animal reproduction.

07.0 APPLY BUSINESS SKILLS AND ECONOMIC PRINCIPLES TO THE AGRICULTURAL INDUSTRY--

The student will be able to:

- 07.01 Explain the basic economic principles in the agricultural industry.
- 07.02 Explain the importance and impacts of local, state, and federal regulations and required documentation affecting the agricultural industry.
- 07.03 Describe the types of agribusiness by organizational structure (i.e. sole proprietorship, partnership, corporation, cooperatives).
- 07.04 Select and use computer applications.
- 07.05 Analyze and interpret agribusiness data.
- 07.06 Keep and maintain supervised agricultural experience (SAE) records.
- 07.07 Interpret legal descriptions of land.

08.0 EXPLAIN THE BASIC MARKETING PROCESSES IN THE AGRICULTURAL INDUSTRY--The

student will be able to:

- 08.01 Describe key factors in marketing agricultural products.
- 08.02 Select agricultural products according to grades and standards.

09.0 DEMONSTRATE HUMAN-RELATIONS, COMMUNICATIONS, AND LEADERSHIP SKILLS--The

student will be able to:

- 09.01 Demonstrate acceptable work habits and attitudes.
- 09.02 Correctly follow oral and written directions and ask questions that clarify directions, as needed.
- 09.03 Communicate effectively in verbal, written, and nonverbal modes.
- 09.04 Recognize and demonstrate good listening skills.
- 09.05 Conduct small informal and formal group meetings.
- 09.06 Identify the opportunities for leadership development available through an appropriate student and/or professional organization.
- 09.07 Recognize and demonstrate communications skills in the workplace.
- 09.08 Demonstrate effective telephone skills.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8106210
Course Title: Animal Science and Services 2
Course Credit: 1

COURSE DESCRIPTION:

This course is designed to develop competencies in the areas of safety; animal behavior; animal welfare; animal control; and employability skills.

10.0 DESCRIBE ANIMAL SCIENCE AND THE ROLE OF ANIMALS IN SOCIETY--The student will be able to:

- 10.01 Describe animal science.
- 10.02 Describe the role of animals in society.
- 10.03 Locate and obtain informational materials on animal-related topics or issues.

11.0 IDENTIFY CAREERS IN THE ANIMAL INDUSTRY--The student will be able to:

- 11.01 Locate and obtain information on animal-industry careers and career opportunities.
- 11.02 Describe various careers in the animal industry.
- 11.03 Describe training requirements for entry and advancement in animal-industry careers.
- 11.04 Identify professional organizations and trade journals in the animal industry.

12.0 PRACTICE ANIMAL AND LABORATORY SAFETY--The student will be able to:

- 12.01 Practice safe procedures when working with animal-related equipment and in laboratory settings.
- 12.02 Practice safety precautions around animals.
- 12.03 Discuss the impact of unsafe procedures.
- 12.04 Define zoonosis.
- 12.05 Describe selected zoonotic diseases.
- 12.06 Discuss OSHA as it relates to the animal industry.

13.0 DEMONSTRATE BASIC FIRST AID FOR HUMANS--The student will be able to:

- 13.01 Locate and use a first aid kit.
- 13.02 Recognize allergic reactions.
- 13.03 Describe proper use of eye wash solution.
- 13.04 Control minor hemorrhage and/or trauma.
- 13.05 Practice emergency procedures.

14.0 IDENTIFY PARTS AND FUNCTIONS OF VARIOUS SYSTEMS OF SELECTED ANIMALS--The student will be able to:

- 14.01 Identify parts of the skeletal system of selected animals.
- 14.02 Compare human skeletal system to that of other animals.
- 14.03 Identify parts and functions of the following systems of selected animals:
- respiratory system
 - urinary system
 - digestive system
 - cardiovascular system
 - reproductive system
 - nervous system
- 14.04 Employ correct terminologies for the variety of animal species and conditions within those species.
- 15.0 RECOGNIZE NORMAL AND ABNORMAL ANIMAL BEHAVIORS--The student will be able to:
- 15.01 Distinguish between instinctive and learned behaviors.
- 15.02 Recognize normal and abnormal behavioral characteristics of animals through observations.
- 15.03 Recognize signs of aggressive animal behaviors.
- 15.04 Identify behavioral problems.
- 20.0 DIFFERENTIATE BETWEEN ANIMAL WELFARE AND ANIMAL RIGHTS--The student will be able to:
- 20.01 Define animal welfare and animal rights.
- 20.02 Explain the differences between animal welfare and animal rights.
- 20.03 Identify animal welfare and animal rights advocate groups.
- 20.04 Debate current events concerning animal welfare and animal rights.
- 20.05 Describe animal cruelty and the consequences of cruel treatment of animals.
- 21.0 DEMONSTRATE KNOWLEDGE OF ANIMAL CONTROL AND HUMANE SOCIETIES--The student will be able to:
- 21.01 Differentiate between animal control agencies and humane societies.
- 21.02 Describe the responsibilities and goals of animal control agencies and humane societies.
- 21.03 Explain the laws governing each organization.
- 21.04 Identify and locate local animal control agencies and humane societies.
- 23.0 DEMONSTRATE EMPLOYABILITY AND INTERPERSONAL SKILLS--The student will be able to:
- 23.01 Demonstrate acceptable employee hygiene habits.
- 23.02 Demonstrate appropriate responses to criticisms from employer, supervisor, and peers.
- 23.03 Complete pertinent forms for employment, such as resume, job applications, W-4 forms.
- 23.04 Demonstrate job interview techniques.

23.05 Explain the "Right-to-Know" law.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8106220
Course Title: Animal Science and Services 3
Course Credit: 1

COURSE DESCRIPTION:

This course is designed to develop competencies in the areas of animal digestive systems; animal breeding; preventive medicine and disease control; control of parasites; animal marketing; and analyzing records.

16.0 IDENTIFY THE DIFFERENT DIGESTIVE SYSTEMS OF ANIMALS AND THE NUTRITIONAL REQUIREMENTS OF SELECTED SPECIES--The student will be able to:

- 16.01 Differentiate between ruminants and non-ruminants.
- 16.02 Differentiate between omnivorous, carnivores, and herbivores.
- 16.03 Describe the basic nutritional requirements of selected species.
- 16.04 Analyze different food labels.
- 16.05 Formulate animal food products.
- 16.06 Schedule feeding times for selected animals.

17.0 EXPLAIN THE REPRODUCTIVE SYSTEM AND BREEDING OF SELECTED ANIMALS--The student will be able to:

- 17.01 Describe the male and female reproductive systems.
- 17.02 Determine sex of animals.
- 17.03 Determine appropriate age for breeding.
- 17.04 Identify gestation length.
- 17.05 Describe estrous cycle.
- 17.06 Describe breeding techniques.
- 17.07 Select male and female for breeding.
- 17.08 Care of breeding stock.
- 17.09 Care of newborn.
- 17.10 Explain the differences and similarities between reproduction in animal species.

18.0 DEMONSTRATE KNOWLEDGE OF PREVENTIVE MEDICINE AND DISEASE CONTROL--The student will be able to:

- 18.01 Describe the importance of preventive medicine for animal health.
- 18.02 Recognize healthy animals.
- 18.03 Describe common diseases of animals.
- 18.04 Describe vaccinations available for disease prevention and vaccination procedures.
- 18.05 Evaluate and report health conditions of animals.
- 18.06 Collect urine and feces samples for analysis.
- 18.07 Describe the process for collecting blood samples for analysis.
- 18.08 Administer prescribed oral medications.

- 18.09 Describe the process for administering medications by injection.
 - 18.10 Describe the procedure for safe disposal of medications.
 - 18.11 Discuss the term immunology and active and passive immunity.
 - 18.12 Describe procedures for periodic health check-up.
- 19.0 DESCRIBE INTERNAL AND EXTERNAL PARASITES AND CONTROL METHODS--The student will be able to:
- 19.01 Describe the internal and external parasites of selected animals.
 - 19.02 Describe the methods of parasite prevention.
 - 19.03 Describe the methods of parasite control.
 - 19.04 Use a microscope for selected practices.
 - 19.05 Describe the process for fecal sample collection, slide preparation, and examination.
- 22.0 DISCUSS ANIMAL MARKETING TECHNIQUES--The student will be able to:
- 22.01 Demonstrate procedures for preparing, maintaining, and exhibiting animals.
 - 22.02 Collect and interpret market reports and identify market outlets for companion and food-producing animals.
- 24.0 MAINTAIN AND ANALYZE RECORDS--The student will be able to:
- 24.01 Maintain and analyze animal records.
 - 24.02 Discuss the legal requirements of maintaining animal health records, and maintain and analyze animal health records.
 - 24.03 Maintain and analyze basic business records (inventory, depreciation, receipts, and expenses) using computer applications.
 - 24.04 Maintain supervised agricultural experience (SAE) records.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8106230
Course Title: Animal Science and Services 4
Course Credit: 1

COURSE DESCRIPTION:

This course is designed to develop competencies in the areas of nutrition; grooming, exhibiting and marketing animals; operation, maintenance and repair of equipment.

25.0 APPLY APPROVED NUTRITIONAL PRACTICES--The student will be able to:

- 25.01 Evaluate animal feed and feeding systems
- 25.02 Measure and add medication to feed as prescribed.
- 25.03 Determine amount to feed individual animals.
- 25.04 Balance a feed ration.

26.0 GROOM, EXHIBIT AND MARKET ANIMALS--The student will be able to:

- 26.01 Groom selected animals for exhibition.
- 26.02 Train animals for show and/or exhibition.
- 26.03 Show and exhibit animals.
- 26.04 Demonstrate knowledge required to train selected animals to halter.
- 26.05 Weigh animals.
- 26.06 Prepare animals for transport.
- 26.07 Identify market outlets.
- 26.08 Describe methods of restraining, loading, handling, and transporting animals safely.
- 26.09 Collect and interpret market reports.
- 26.10 Determine market grades of animals and animal products.
- 26.11 Analyze shipping and health certificates.

27.0 MAINTAIN EQUIPMENT AND FACILITIES--The student will be able to:

- 27.01 Clean and disinfect pens, cages, feeders, waterers, trailers and other equipment.
- 27.02 Dispose of animal residue and waste.
- 27.03 Clean and maintain equipment and instruments.
- 27.04 Repair and maintain pens, cages and other facilities and structures.
- 27.05 Perform maintenance and minor repair of electrical and plumbing fixtures and equipment.
- 27.06 Maintain a clean, sanitary and healthy environment for animals.

28.0 OPERATE, MAINTAIN, AND REPAIR MACHINERY AND EQUIPMENT--The student will be able to:

- 28.01 Use equipment-operator and repair manuals.
- 28.02 Service and maintain small gasoline engines.

- 28.03 Operate, service, and maintain tractors and equipment.
- 28.04 Maintain records of equipment maintenance and repair.
- 28.05 Prepare equipment for storage.
- 28.06 Demonstrate proper use of shop and lab equipment.
- 28.07 Demonstrate safety practices in operating machinery and equipment.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8106240
Course Title: Animal Science and Services 5
Course Credit: 1

COURSE DESCRIPTION:

This course is designed to develop competencies in the areas of maintaining and analyzing records; animal health practices; and emergency first aid for animals.

29.0 MAINTAIN AND ANALYZE RECORDS--The student will be able to:

- 29.01 Maintain and analyze production, performance and breeding records, using computer applications.
- 29.02 Identify major sources of credit.
- 29.03 Evaluate leasing and renting agreements.
- 29.04 Evaluate need for liability and other insurance.
- 29.05 Analyze records to determine efficiency of operation.
- 29.06 Maintain machinery, equipment and facilities inventory records.
- 29.07 Maintain breeding records.
- 29.08 Prepare an annual budget.
- 29.09 Maintain and analyze basic business records (inventory, depreciation, receipts, and expenses) using computer applications.
- 29.10 Plan a work schedule.
- 29.11 Maintain personnel and labor records.
- 29.12 Maintain supervised agricultural experience records.
- 29.13 Discuss the legal requirements of maintaining animal health records, and maintain and analyze health records.
- 29.14 Maintain chemical-use and water-use records, etc.

30.0 APPLY ANIMAL HEALTH PRACTICES--The student will be able to:

- 30.01 Evaluate and report common ailments of animals (diseases, disorders associated with feeding, stress, internal and external parasites).
- 30.02 Administer prescribed oral medications (under supervision).
- 30.03 Administer prescribed injections (under supervision).
- 30.04 Locate injection points of selected animals (under supervision).
- 30.05 Sterilize instruments and supplies.
- 30.06 Interpret and follow directions on medications and animal health aids, including withholding milk from cows on medication and the control of mastitis.
- 30.07 Dip, spray, or dust animals for external parasites (under supervision).
- 30.08 Dispose of empty chemical and medical containers as prescribed.
- 30.09 Dispose of deceased animals as prescribed.
- 30.10 Store medications and chemicals safely and securely.

- 30.11 Select and administer growth stimulants and implants (under supervision).
- 30.12 Discuss castration, dehorning, docking, and debeaking.
- 30.13 Dispose of biomedical waste and by products (needles, scalpel blades, medicines, etc.)

31.0 PERFORM EMERGENCY FIRST AID ON ANIMALS--The student will be able to:

- 31.01 Evaluate the health status of the animals.
- 31.02 Isolate injured animals.
- 31.03 Cleanse wounds.
- 31.04 Apply antiseptic.
- 31.05 Immobilize fractured limbs.
- 31.06 Identify and stop external bleeding.
- 31.07 Seek additional medical attention for animals when required.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8106250
Course Title: Animal Science and Services 6
Course Credit: 1

COURSE DESCRIPTION:

This course is designed to develop competencies in the areas of identifying, selecting and breeding food-producing animals; management; growing and maintaining pasture and forage crops; and interpreting rules and regulations affecting the livestock industry.

32.0 IDENTIFY, SELECT, AND BREED FOOD-PRODUCING ANIMALS--The student will be able to:

- 32.01 Appraise animal conformation and desirable characteristics and breeds.
- 32.02 Determine age to breed selected animals.
- 32.03 Describe estrous cycle of food-producing animals.
- 32.04 Describe breeding techniques, including artificial insemination.
- 32.05 Cull offspring.
- 32.06 Describe basic animal genetics.
- 32.07 Identify signs of parturition.
- 32.08 Identify common disorders of parturition.
- 32.09 Prepare animals and facilities for parturition.
- 32.10 Assist in the delivery of newborn animals.

33.0 PLAN ROUTINE MANAGEMENT OF FOOD-PRODUCING ANIMALS AND FACILITIES--The student will be able to:

- 33.01 Schedule feeding and care of animals.
- 33.02 Order supplies and animal feeds.
- 33.03 Develop training and exercise schedule for animal.
- 33.04 Plan for routine maintenance of equipment and facilities.
- 33.05 Assist in the planning of a routine animal health and preventative medication program.
- 33.06 Implement and maintain sanitary conditions for animals, including young.
- 33.07 Separate non-compatible animals.
- 33.08 Observe animals on a regular basis for problems or stress.
- 33.09 Develop a calendar of operations for a selected animal operation.

34.0 GROW AND MAINTAIN PASTURE AND FORAGE CROPS--The student will be able to:

- 34.01 Compare pasture, forage and feed crop production and harvesting systems.
- 34.02 Assist in determining pasture and forage needs.
- 34.03 Take a soil sample and interpret results.

- 34.04 Describe soil and water conservation practices.
- 34.05 Determine range and pasture quality.
- 34.06 Prepare soil for feed, pasture and forage crops.
- 34.07 Plant and grow feed, pasture and forage crops.
- 34.08 Fertilize feed, pasture and forage crops.
- 34.09 Control noxious weeds and pests in crops.
- 34.10 Harvest forage and feed crops.
- 34.11 Store harvested feed and forage crops.
- 34.12 Assist in the development of a plan for the rotation of fields, pens and pastures.

35.0 IDENTIFY AND INTERPRET RULES AND REGULATIONS AFFECTING THE LIVESTOCK INDUSTRY--The student will be able to:

- 35.01 Maintain a file of current livestock rules and regulations.
- 35.02 Secure professional services and information.
- 35.03 Observe EPA pesticide use regulations.
- 35.04 Identify the procedures and requirements for obtaining a restricted use pesticide applicator's license.
- 35.05 Observe regulations regarding the use of medications and growth stimulants.
- 35.06 Observe state and federal regulations regarding brucellosis testing/eradication programs and other programs.
- 35.07 Identify applicable land-use and zoning regulations.
- 35.08 Identify agencies affecting land and wildlife utilization (e.g., DNR, DEP, EPA)
- 35.09 Identify agencies regulating employee/employer relations (e.g., OSHA).