

ISBE Course Code 22151A001

Career Exploration

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Orientation Course* (Group 1)
- ✓ Recommended for Grades 5-8

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

Career Exploration courses help students identify and evaluate personal goals, priorities, aptitudes, and interests with the goal of helping them make informed decisions about their careers. These courses expose students to various sources of information on career and training options and may also assist them in developing job search and employability skills.



Exploratory Agricultural Science

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Orientation Course* (Group 1)
- ✓ Recommended for Grades 5-8

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

This exploration course provides the opportunity to learn fundamental concepts in agriculture to serve as a foundation for future courses and to inform students about the industry that is so vital to society and to their future. Major units of instruction include an introduction to the agricultural industry, animal science, plant science, horticulture science, agribusiness, environmental science, agricultural mechanics, food science, and leadership and personal development. Participation in FFA student organization activities is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Introduction to the Agricultural Industry

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Introductory Course* (Group 2)
- ✓ Recommended for Grades 9-11

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

This course provides an opportunity for students to learn how the agricultural industry is organized; its major components; the economic influence of agriculture at state, national and international levels; and the scope and types of job opportunities in the agricultural field. Basic concepts in animal science, plant science, soil science, horticulture, natural resources, agribusiness management, and agricultural mechanics, will be presented. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Basic Agricultural Science

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Introductory Course* (Group 2)
- ✓ Recommended for Grades 9-11

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

This course builds on basic skills and knowledge gained in the Introduction to the Agricultural Industry course. Major units of instruction include agricultural research, soil science, advanced plant science, biotechnology, advanced animal science. Applied science and math skills and concepts will be stressed throughout the course as they relate to each area. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Foundational Supervised Agricultural Experience (SAE)

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Introductory Course* (Group 2)
- ✓ Recommended for Grades 9-11

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

This course is designed to establish, improve, and/or expand knowledge and skills in various agricultural careers. Students will increase their awareness of agricultural careers through the following components: Career Exploration and Planning; Employability Skills for College and Career Readiness; Personal Financial Management and Planning; Workplace Safety; and Agricultural Literacy (may be transitioned to Immersion SAE). Participation in FFA student organization activities and exploration of Immersion Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Basic Biological Science Applications in Agriculture - Animals

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Introductory Course* (Group 2)
- ✓ Recommended for Grades 9-11

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

This course is designed to reinforce and extend students understanding of science by associating scientific principles and concepts with relevant applications in agriculture. Students will examine major phases of animal agriculture and specific biological science concepts that govern management decisions in the animal industry. Topics of study are in the areas of growth and development of animals – embryology, ethology, nutrition, immunity systems, and processing animal products – preservation, fermentation, and pasteurization. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



ISBE Course Code 18101A003

Basic Animal Science

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Introductory Course* (Group 2)
- ✓ Recommended for Grades 9-11

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

This course is designed to introduce students to the livestock (beef, dairy, sheep, goats, and swine), poultry, and large (equine) animal industry and provide them with basic animal science knowledge that can be further developed in advanced animal science courses. Major units of instruction include animal science careers, animal anatomy and physiology, animal reproduction, animal nutrition, genetics, animal health, small and large animal care, and meat science. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Advanced Biological Science Applications in Agriculture (BSAA) - Animals

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Skills Course* (Group 3)
- ✓ Recommended for Grades 10-12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

This course is designed to reinforce and extend students' understanding of biology by associating advanced scientific principles and concepts with relevant applications in agricultural animal systems. Students will examine major phases of animal agriculture and specific biological science concepts that govern management decisions in the animal industry. Topics of study are in the areas of growth and development of animals – embryology, ethology, nutrition, immunity systems, and processing animal products preservation, fermentation, and pasteurization. The course will be valuable preparation for post-secondary education and will increase the relevance of science through the applied setting of agricultural animal systems by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Skills Course* (Group 3)
- ✓ Recommended for Grades 10-12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

This course will develop students' understanding of the livestock (beef, dairy, sheep, goats, and swine), poultry, and large (equine) animal industry. Topics of instruction include scientific investigations, genetics, animal anatomy and physiology, animal nutrition, animal reproduction, animal health, and meat science. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



ISBE Course Code 18105A001
Veterinary Science

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Skills Course* (Group 3)
- ✓ Recommended for Grades 10-12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

This course will develop students' understanding of the small and companion animal industry, animal anatomy and physiology, animal ethics and welfare issues, animal health, veterinary medicine, veterinary office practices, and animal services to humans. Topics to be discussed include: veterinary terminology, anatomy and physiology, pathology, genetics, handling and restraint, first-aid and physical examinations along with common surgical skills. Career exploration will focus on veterinarian, veterinary lab technicians, office lab assistant, small animal production, research lab assistant, and animal nutrition lab technician. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Service and Support Animal Training

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Skills Course* (Group 3)
- ✓ Recommended for Grades 10-12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

"Service and Support Animal Training course provide students with skills and knowledge necessary to provide care and training for companion and service animals. Topics include animal behavior, training tools, and animal care. The course will focus on providing students understanding on how to select, socialize, and train companion and service animals to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Agricultural Communications

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Skills Course* (Group 3)
- ✓ Recommended for Grades 10-12

Instructional Model

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- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

Students will analyze current agricultural issues and determine how they affect people on all sides of the issue. The students then learn and enhance their written and oral communication skills by presenting their views and opinions to the class. Students learn how to arrange and present debates, speeches, and interviews to be effective leaders in today's society. This course can also be designed to provide students with the knowledge and leadership experiences to help them to become successful in life and in the workplace. Students will further enhance their potential for leadership development, personal growth, and career success. Topics may include workplace skills, effective communication, decision-making, problem-solving, leadership styles and qualities, and successful execution of teamwork or collaborative activities. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Skills Course* (Group 3)
- ✓ Recommended for Grades 10-12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

This course will primarily focus on agriculture in developing countries and frame this focus within a discussion of contemporary crucial issues facing food, agriculture and natural resources on a global scale. The course will look at the impacts of geographic, political, economic, and social issues of a particular country or region and how that affects their agriculture and trade. This course will also examine the impacts that trade agreements have on other countries' agriculture. Specific emphasis will also be placed on debates concerning global hunger and food security. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Agriculture Computers and Technology

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

Agriculture Computers and Technology courses help students develop their knowledge and skills in using computer and other technology to operate and manage agricultural businesses. These courses allow students to use computer hardware, software, and the Internet to find information, record and analyze financial and production data, track market trends and economic forecasts, monitor weather, utilize global positioning systems, and prepare communications and reports. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Aquacultural Science and Technology

Key Course Details

- ✓ Aligned to **Multiple Pathways**
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns to the following pathways within the Agriculture, Food and Natural Resources (AFNR) career cluster: Animal Systems (AS), Biotechnology Systems (BS), Food Products and Processing Systems (FPPS), Natural Resource Systems (NRS), and Plant Systems (PS). Course concepts will provide a structure for advanced study in each aligned pathway.

Course Description

This course is designed to develop student knowledge and skills in the area of aquacultural science and technology. Instructional units include basic studies of aquacultural species; reproduction processes, genetics, nutrition and health in aquacrops; ecological balances; and environmental requirements of aquatic plants and animals. Water quality, chemical and temperature analyses will be conducted for a variety of aquacrops. Individual and group experimentation and student research project(s) are required for satisfactory completion of this course. Careers to be examined include fish hatchery technician, production manager, fish nutritionist, and researcher. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



ISBE Course Code 18102A001
Small Animal Care

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

Small Animal Care courses focus on the care and management of small animals. Animal nutrition, health, behavior, reproduction and breeding, anatomy and physiology, use of qualitative and quantitative analyses for decision-making, facilities, handling and training, and grooming are typical areas of study. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



ISBE Course Code 18103A001
Large Animal Care

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

Large Animal Care courses focus on the care and management of large animals. Animal nutrition, health, behavior, reproduction and breeding, anatomy and physiology, use of qualitative and quantitative analyses for decision-making, facilities, handling and training, and grooming are typical areas of study. Course topics may include product processing and marketing. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



ISBE Course Code 18104A001
Equine Science

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

Equine Science courses focus on the care and management of horses. Animal nutrition, health, behavior, reproduction and breeding, anatomy and physiology, use of qualitative and quantitative analyses for decision-making, facilities, handling and training, and grooming are typical areas of study. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



ISBE Course Code 18107A001

Animal Nutrition

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

Animal Nutrition courses provide students with opportunities to study the structure and function of organic and inorganic nutrients. Topics may include the essential nutritive requirements of domestic livestock, poultry, and companion animals; digestion, absorption, metabolism, and barriers for nutrient utilization; sources of nutrients; application of energy systems and concepts; and regulation of feed intake in animals. These courses also teach students how to compare and contrast the nutritional levels for animal maintenance and production. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



ISBE Course Code 18108A001

Animal Genetics

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

Animal Genetics courses explore genetic inheritance in agricultural animals and the identification of livestock breeds by the origin, significance, distribution, and domestication of animal species. These courses allow students to compare and contrast the hierarchical classification of the major agricultural animal species and identify breeding system options based on the principles of genetics. These courses also address selecting animals based on quantitative breeding values for specific characteristics. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Animal Systems Independent Study

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Independent Study Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

Courses in Animal Systems Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to animal systems. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Advanced Biological Science Applications in Agriculture

Key Course Details

- ✓ Aligned to **Multiple Pathways**
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns to both the Animal Systems (AS) and Plant Systems (PS) pathways within the Agriculture, Food and Natural Resources (AFNR) career cluster. Course concepts will provide a structure for advanced courses in each aligned pathway.

Course Description

Advanced Biological Science Applications in Agriculture courses are designed to provide information regarding the fundamental concepts of life and life processes as related to the local environment. Course topics may include nature appreciation, local flora and fauna, biology, and zoology. The course will be valuable preparation for further education and will increase the relevance of science through the applied setting of agriculture by enhancing literacy in science and the scientific process. Improving computer and workplace skills will be a focus. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Agricultural Leadership

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Advanced Course* (Group 4)
- ✓ Recommended for Grade 12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

Agricultural Leadership courses help students develop leadership skills with a focus on opportunities in the food, fiber, and natural resources industries. Topics may include but are not limited to human relationships and effective communication, decision-making and problem-solving, leadership qualities and styles, and ensuring successful completion of group activities. Students will learn to lead groups and teams, manage volunteers, exercise leadership ethics, and be able to demonstrate leadership in multicultural settings. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration and reinforcement of academic concepts.



Animal Systems Workplace Experience

Key Course Details

- ✓ Aligned to **Animal Systems** Pathway
- ✓ Recognized as an *AFNR Workplace Experience Course* (Group 5)
- ✓ Recommended for Grades 10-12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

The Animal Systems (AS) Career Pathway encompasses the study of animal systems, including content areas such as life processes, health, nutrition, genetics, management, and processing, as applied to small animals, aquaculture, exotic animals, livestock, dairy, horses and/or poultry. Students completing a program of study in this pathway will demonstrate competence in the application of principles and techniques for the development, application, and management of animal systems in AFNR settings.

Course Description

Animal Systems Workplace Experience courses provide work experience in fields related to animal systems (management, care, and/or processing). Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.



Agriculture, Food & Natural Resources Workplace Experience

Key Course Details

- ✓ Aligned to **all AFNR** Pathways
- ✓ Recognized as an *AFNR Workplace Experience Course* (Group 5)
- ✓ Recommended for Grades 10-12

Instructional Model

Agriculture, Food, and Natural Resources (AFNR) education prepares students for successful careers and a lifetime of informed choices in global agriculture, food, fiber and natural resources systems. The AFNR instructional model provides students with opportunities for leadership development, personal growth, and career success. Model instruction in all AFNR courses is delivered via three major components:

- Classroom/Laboratory Instruction
- AFNR Work-based Learning
- Student Leadership Organizations

Pathway Alignment

This course aligns with all pathways in the AFNR career cluster. Skills and knowledge gained by students throughout this course are applicable to a wide range of AFNR occupations.

Course Description

Agriculture, Food & Natural Resources Workplace Experience courses provide work experience in fields related to the Agriculture, Food, & Natural Resources cluster. Goals must be set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses must include classroom instruction at least once per week, involving further study of the field, discussion of relevant topics that are responsive to the workplace experience and employability skill development. Workplace Experience courses must be taught by an approved WBL educator-coordinator. These courses should be aligned to a Career Development Experience that could include: Student-led Enterprises; School-based Enterprises; Immersion Supervised Agricultural Experiences; Clinical Experiences in Science and Technology programs; Internships; and Apprenticeship programs including Youth Apprenticeships, Pre-apprenticeships, and Registered Apprenticeships.

