AFNR

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.

AFNR

ISBE Course Code 68003A001

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.

AFNR

ISBE Course Code 18001A001

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.

AFNR

ISBE Course Code 18003A001

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.

AFNR

ISBE Course Code 18999A001

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.

ESS

ISBE Course Code 18504A004

Basic Environmental Science

Key Course Details

- ✓ Aligned to **Environmental Service 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 Environmental Service Systems (ESS) Career Pathway encompasses the study of systems, instruments, and technology used to monitor and minimize the impact of human activity on environmental systems. 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 environmental systems in AFNR settings.

Course Description

This course provides basic scientific knowledge and understanding of how our world works from an environmental perspective. Topics covered include: basic principles of ecosystem function; biodiversity and its conservation; Wildlife population growth; water resources and management; water, air and soil pollution; climate change; energy resources, and sustainability. 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.

MULTI

ISBE Course Code 18449A002

Physical Science Applications in Agriculture I

Key Course Details

- ✓ Aligned to **Multiple 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 to both the Environmental Service Systems (ESS) and Power, Structural and Technical Systems (PSTS) 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

This course is designed to reinforce and extend students understanding of physical science and the scientific process by associating scientific and math principles and concepts with relevant applications in agriculture. Topics of study are in the areas of scientific investigations, environmental/natural resource systems, agricultural production systems, agricultural structural systems, energy and power systems, agricultural mechanics and machine systems, and food processing systems. 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.

ESS

ISBE Course Code 18406A001

Water Treatment

Key Course Details

- ✓ Aligned to **Environmental Service 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 Environmental Service Systems (ESS) Career Pathway encompasses the study of systems, instruments, and technology used to monitor and minimize the impact of human activity on environmental systems. 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 environmental systems in AFNR settings.

Course Description

Water Treatment courses provide instruction regarding the environmental hazards associated with identifying and accepting waste water disposal. Course topics typically include waste water, the steps in wastewater treatment, compliance with applicable regulations, and the use of water-testing instruments and water-treatment equipment to treat wastewater. 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.

ESS

ISBE Course Code 18504A001

Environmental Science

Key Course Details

- ✓ Aligned to **Environmental Service 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 Environmental Service Systems (ESS) Career Pathway encompasses the study of systems, instruments, and technology used to monitor and minimize the impact of human activity on environmental systems. 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 environmental systems in AFNR settings.

Course Description

This course examines the relationship of agriculture and the environment. The impact of plant and animal production practices on the environment and the adoption of practices leading to improved air, land, and water quality are investigated. Areas of emphasis include: types of ecosystems, management of waste, chemical use, soil conservation, land uses and regulations, and water and air quality. Encouraging students to be conscious and concerned about the environment and recognizing the need to conserve the environment and its resources will be a theme throughout. Careers of environmental technicians, soil and water conservationists, monitoring field technicians, land surveyor, and related occupations will be examined. 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.

AFNR

ISBE Course Code 18203A002

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

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

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.

AFNR

ISBE Course Code 18204A002

Global Agriculture

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.

AFNR

ISBE Course Code 18203A003

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.

MULTI

ISBE Course Code 18405A001

Precision 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 Environmental Service Systems (ESS) and Power, Structural, and Technical Systems (PSTS) 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

Precision Agriculture courses provide a fundamental understanding of the principles of precision agriculture. Topics may include Global Positioning Systems (GPS); Geographical Information Systems (GIS); yield monitors; remote sensing; drones; grid soil sampling; variable rate application; digital image processing simulator (DIPS); Geodesy, automated cartography (Auto-Carto); land surveying (LS); navigation and guidance to effectively use data to make informed production management decisions. These courses may use spatial analysis models and guidelines for integrating, interpreting, analyzing, and synthesizing geographic data, with a focus on both the implications and limitations of such technologies. 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.

AFNR

ISBE Course Code 18205A001

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.

ESS

ISBE Course Code 18997A002

Environmental Service Systems Independent Study

Key Course Details

- ✓ Aligned to **Environmental Service 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 Environmental Service Systems (ESS) Career Pathway encompasses the study of systems, instruments, and technology used to monitor and minimize the impact of human activity on environmental systems. 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 environmental systems in AFNR settings.

Course Description

Courses in Environmental Service Systems Independent Study, often conducted with instructors as mentors, enable students to explore topic of interest related to agriculture, food, and natural resources. 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.

MULTI

ISBE Course Code 21058A001

Geospatial 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: Environmental Service Systems (ESS), Natural Resource Systems (NRS), and Power, Structural, and Technical Systems (PSTS). Course concepts will provide a structure for advanced study in each aligned pathway.

Course Description

Geospatial Technology courses provide students with experiences pertaining to the study of geographic information systems (GIS), global positioning systems (GPS), remote sensing (RS), digital image processing simulator (DIPS), Geodesy, automated cartography (Auto-Carto), land surveying (LS), and navigation. These courses may use spatial analysis models and guidelines for integrating, interpreting, analyzing, and synthesizing geographic data, with a focus on both the implications and limitations of such technologies. Other topics may include interfacing with telecommunications and automated database management systems.

MULTI

ISBE Course Code 21054A004

Technology, Society and Sustainability

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 Environmental Service Systems (ESS) and Natural Resource Systems (NRS) pathways within the Agriculture, Food and Natural Resources (AFNR) career cluster. Course concepts will provide a structure for advanced study in each aligned pathway.

Course Description

Technology, Society and Sustainability course will provide an overview of the importance of, impact on, and relationships between technological endeavors and society at large. This courses typically emphasize environmental factors, economics impacts and the influences of society on technological/environmental endeavors.

MULTI

ISBE Course Code 18310A001

Sustainable 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 the following pathways within the Agriculture, Food and Natural Resources (AFNR) career cluster: Biotechnology Systems (BS), Environmental Service Systems (ESS), Food Products and Processing Systems (FPPS), and Plant Systems (PS). Course concepts will provide a structure for advanced study in each aligned pathway.

Course Description

Sustainable/Alternative Agriculture courses explore technological and environmental changes and concerns. These courses address alternative approaches to food production including, but not limited to, organics, low-input, natural, and sustainable production methodology and practices. Course content may include comparing the effects of alternative production practices to those of conventional production practices. 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.

MULTI

ISBE Course Code 18449A003

Physical Science Applications in Agriculture II

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 Environmental Service Systems (ESS) and Power, Structural and Technical Systems (PSTS) pathways within the Agriculture, Food and Natural Resources (AFNR) career cluster. Course concepts will provide a structure for advanced study in each aligned pathway.

Course Description

This course is designed to reinforce and extend students understanding of physical science and the scientific process by associating scientific and math principles and concepts with relevant applications in agriculture. Topics of study are in the areas of scientific investigations, environmental/natural resource systems, agricultural production systems, agricultural structural systems, energy and power systems, agricultural mechanics and machine systems, and food processing systems. 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. 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.

MULTI

ISBE Course Code 18506A001

Alternative Energy

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 Environmental Service Systems (ESS) and Natural Resource Systems (NRS) pathways within the Agriculture, Food and Natural Resources (AFNR) career cluster. Course concepts will provide a structure for advanced study in each aligned pathway.

Course Description

Alternative Energy courses help students identify renewable and nonrenewable energy sources and natural resources. Topics typically include alternative energy sources and their respective advantages and disadvantages; the impact of conventional and alternative energy sources on the environment; the efficiency of energy production from various sources; and careers in the fields of alternative energy and sustainability.

MULTI

ISBE Course Code 18055A001

Soil Science

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 Environmental Service Systems (ESS), Natural Resource Systems (NRS), 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

Soil Science courses involve the study of soil properties, including soil chemistry, biology, fertility, mineralogy, and hydrology. Topics covered may also include soil conservation, irrigation, soil genesis, soil surveys, and management. 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.

ESS

ISBE Course Code 18998A004

Environmental Services Systems Workplace Experience

Key Course Details

- ✓ Aligned to **Environmental Service 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 Environmental Service Systems (ESS) Career Pathway encompasses the study of systems, instruments, and technology used to monitor and minimize the impact of human activity on environmental systems. 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 environmental systems in AFNR settings.

Course Description

Environmental Services Systems Workplace Experience courses provide work experience in fields related to environmental services systems. 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.

AFNR

ISBE Course Code 18998A003

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.