

MIDDLE SCHOOL AFNR

Code	Old Standard	Code	New Standard
*No existing standards		MSA1.0	Establish an understanding of the three main parts of the agricultural education program
		MSA1.1	Define Supervised Agricultural Experience Program
		MSA1.2	Explore opportunities in the National FFA Organization
		MSA1.3	Demonstrate an understanding of Agricultural Education
		MSA2.0	Express the importance of agriculture in daily life.
		MSA2.1	Give examples of how the agriculture industry provides basic human needs (food, clothing, shelter).
		MSA2.2	Discuss how the skills needed for agricultural work have evolved.
		MSA2.3	Summarize the importance of agriculture of South Dakota's economy.
		MSA3.0	Examine agriculture industries of the past, present, and future.
		MSA3.1	Appraise fundamentals of the agriculture industry and its impact on the world.
		MSA3.2	Explore the animal science industry including large and/or small animals.
		MSA3.3	Explore the plant science industry including agronomic and/or horticultural crops.
		MSA4.0	Use basic principles of agricultural systems technology.
		MSA4.1	Identify and demonstrate safe use of shop equipment.
		MSA5.0	Develop employability skills related to the AFNR Cluster.
		MSA5.1	Develop soft skills to enhance employability.

INTRO TO AFNR

Code	Old Standard	Code	New Standard
ITA1.0	Examine the role of FFA in agricultural education programs	ITA1.0	Examine the role of FFA in agricultural education programs
ITA1.1	Summarize the history and organization of FFA	ITA1.1	Summarize the history and organization of FFA
ITA1.2	Appraise opportunities in FFA	ITA1.2	Explore opportunities in FFA
		ITA1.3	Demonstrate proper use of parliamentary procedure
ITA2.0	Evaluate the benefits and types of Supervised Agricultural Experience	ITA2.0	Describe the types of Supervised Agricultural Experiences.
ITA2.1	Describe the types of SAE programs	ITA2.1	Evaluate the benefits and types of SAE programs
ITA2.2	Implement an SAE	ITA2.2	Develop a profile within Ag Career Network or Ag Experience Tracker
ITA3.0	Discuss the concept of natural resources	ITA3.0	Discuss the concept of natural resources
			Classify different types of natural resources in order to enable protection, conservation, enhancement, and management
ITA3.1	Describe the major categories of natural resources in America	ITA3.1	in a particular geographical region
ITA3.2	Summarize the history of conservation in the United States		
ITA4.0	Describe the animal science industry	ITA4.0	Describe the animal science industry
ITA4.1	Examine the animal science industry	ITA4.1	Examine the animal science industry
ITA4.2	Discuss current topics in animal science	ITA4.2	Analyze historic and current trends impacting the animal science industry
ITA4.3	Explore career opportunities in animal science		
ITA5.0	Describe plant structure and function	ITA5.0	Describe plant structure and function.
ITA5.1	Explain functions and physiology of cells and seeds	ITA5.1	Examine the plant science industry
ITA5.2	Describe the processes of photosynthesis and respiration	ITA5.2	Analyze historic and current trends impacting the plant science industry.
ITA6.0	Implement basic economic principles	ITA6.0	Summarize basic economic principles.
ITA6.1	Execute basic economic principles as they relate to production agriculture and agribusiness management	ITA6.1	Apply management planning principles in the AFNR business.
ITA7.0	Discuss basic food science technology	ITA7.0	Discuss basic food science technology.
ITA7.1	Illustrate how raw commodities become table-ready food products	ITA7.1	Illustrate how raw commodities become table-ready food products
ITA8.0	Use basic principle of agricultural systems technology	ITA8.0	Use basic principles of agricultural systems technology
ITA8.1	Execute basic principles involved in agricultural systems technology	ITA8.1	Execute basic principles involved in agricultural systems technology
		ITA9.0	Develop employability skills related to the AFNR cluster
		ITA9.1	Develop soft skills to enhance employability

FUNDAMENTAL PLANT SCIENCE

Code	Old Standard	Code	New Standard
PS1.0	Explain the principles of anatomy and physiology in plants in both a domesticated and natural environment	PS1.0	Explain principles of anatomy and physiology in plants
PS1.1	Describe functional differences in plant structures including roots, stems, flowers, leaves and fruit.	PS1.1	Describe functional differences in plant structures including roots, stems, flowers, leaves and fruits
PS1.2	Classify plants based on physiology for taxonomic or other classifications	PS1.2	Classify and identify plants
PS1.3	Interpret biotechnology's use in plant science		
PS2.0	Manipulate the environment to promote optimal growth in plants.	PS2.0	Manipulate the environment to promote optimal growth in plants
PS2.1	Determine nutritional requirements for optimal plant growth	PS2.1	Determine nutritional requirements for optimal plant growth
PS2.2	Examine data to evaluate and manage soil/media and nutrients	PS2.2	Examine data to evaluate and manage soil/media and nutrients
PS3.0	Evaluate the fundamentals of production and harvesting of plants	PS3.0	Evaluate fundamentals of production and harvesting of plants
PS3.1	Employ plant selection techniques for optimal growth and production	PS3.1	Analyze a production plan for optimal plant production
PS3.2	Compare the basic methods for reproducing and propagating plants	PS3.2	Compare the basic methods for reproducing and propagating plants
PS3.3	Analyze a production plan for optimal plant production	PS3.3	Examine fundamentals to harvest, handle, store and market crops
PS3.4	Evaluate an integrated pest management plan		
PS3.5	Examine the fundamentals to harvest, handle, store, and market crops	PS4.0	Explore employability skills within the plant science industry
		PS4.1	Develop soft skills to enhance employability

ADVANCED PLANT SCIENCE

Code	Old Standard	Code	New Standard
APS1.0	Appraise the principles of plant anatomy, classification and physiology for the production and management of plants	ADPS1.0	Recognize principles of plant anatomy, classification, and physiology for the production and management of agronomic plants
APS1.1	Classify agronomic plants according to the classification system, life cycles and plant use	ADPS1.1	Classify plants according to taxonomy, life cycles, and plant use
APS1.2	Compare the benefits and risks of genetically modified plants (GMO)	ADPS1.2	Compare the benefits and risks of genetically modified plants (GMO)
APS1.3	Evaluate a fertilizer plan for specific plants or crops	ADPS2.2	Evaluate a fertilizer plan for specific plants or crops
APS1.4	Evaluate data to manage range and pastures	ADPS2.3	Evaluate data to manage range and pastures
APS1.5	Apply knowledge of seed, fruit and vegetative parts for optimal plant reproduction	ADPS1.3	Apply knowledge of seed, fruit and vegetative parts optimal for plant reproduction
APS2.0	Employ the principles and practices of sustainable agriculture in a plant-based operation	ADPS2.0	Employ the principles and practices of sustainable agriculture in a plant-based operation
APS2.1	Incorporate the fundamentals of plant management and sustainable agriculture	ADPS2.1	Incorporate the fundamentals of plant management and sustainable agriculture
APS2.2	Examine the growth of a plant to determine when and how a crop should be harvested	ADPS2.4	Examine growth of a plant to determine when and how a crop should be harvested and stored
APS2.3	Evaluate crop and harvest success for future planning	ADPS2.5	Evaluate crop and harvest success for future planning
APS2.4	Demonstrate proper practices to maintain a crop in storage		
APS3.0	Implement a pest management plan	ADPS3.0	Analyze a pest management system
APS3.1	Identify pest chemicals by formulation and use	ADPS3.1	Identify pest chemicals by formulation and use
APS3.2	Develop integrated pest management strategies to manage pest populations	ADPS3.2	Develop integrated pest management strategies to manage pest populations
APS3.3	Demonstrate the safe handling, mixing and application of chemical	ADPS3.3	Understand the safe handling, mixing and application of chemicals
		ADPS4.0	Develop employability skills related to the Plant Systems Pathway
		ADPS4.1	Develop soft skills to enhance employability

HORTICULTURE

Code	Old Standard	Code	New Standard
		*New Name: Fundamental Horticulture	
HORT1.0	Explain plant classifications	HORT1.0	Explain horticultural plant classifications
HORT1.1	Describe plant classification		
HORT1.2	Identify horticultural plants	HORT1.1	Classify and identify horticultural plants
HORT2.0	Define the basic principles of plant physiology and propagation	HORT2.0	Define basic principles of plant physiology and propagation
HORT2.1	Explain the basic principles of plant physiology and growth	HORT2.1	Explain basic principles of plant physiology and growth
HORT2.2	Demonstrate the propagation of plants by seeds and cuttings	HORT2.2	Demonstrate the propagation of plants by sexual and asexual methods
HORT3.0	Describe pest management in the horticultural industry	HORT3.0	Describe pest management in the horticultural industry
HORT3.1	Identify the principles of pest management	HORT3.1	Identify principles of pest management
HORT4.0	Analyze soil and water properties as they affect plant growth	HORT4.0	Analyze soil, environment, and fertility properties as they affect plant growth
HORT4.1	Examine water and soil (media) management practices		
HORT4.2	Examine soils and planting media	HORT4.2	Examine the growing environment and its effect on plant growth
HORT5.0	Identify plant nutrients and their affects on proper plant growth	HORT4.3	Identify plan nutrition practices for horticulture plants as they relate to plant growth and health
HORT5.1	Identify plant nutrition practices for ornamental plants as they relate to plant growth and health		
HORT6.0	Demonstrate the importance of managing plant growth		
HORT6.1	Demonstrate the correct principles of pruning and training horticulture plants	HORT5.4	Investigate the care and management of turf grass
HORT7.0	Demonstrate the proper principles of turf grass production		
HORT7.1	Employ selection, installation and maintenance of turf grass	HORT5.3	Investigate the nursery/landscape industry
HORT8.0	Employ the principles of a nursery production		
HORT8.1	Demonstrate the care and maintenance of nursery stock	HORT5.1	Investigate the care and maintenance of vegetable/fruit crops
HORT9.0	Demonstrate the principles of producing vegetable/fruit crops		
HORT9.1	Demonstrate the care and maintenance of vegetable/fruit crops		
HORT10.0	Examine horticulture careers and industry	HORT5.0	Examine horticulture industry sectors
HORT10.1	Examine horticulture career paths	HORT5.2	Investigate the floriculture industry
HORT11.0	Employ record keeping practices		
HORT11.1	Keep records of business transactions and production records		
HORT12.0	Identify the principles of specialized growing procedures		
HORT12.1	Explain the basics of hydroponics production		
HORT12.2	Classify how different hydroponics systems operate	HORT6.0	Develop employability skills related to the Plant Systems Pathway
		HORT6.1	Develop soft skills to enhance employability

ADVANCED HORTICULTURE

Code	Old Standard	Code	New Standard
*New Course		ADVH1.0	Identify plants, equipment, and materials utilized in the horticulture industry
		ADVH1.1	Identify and categorize plants by their purpose
		ADVH1.2	Identify tools and equipment used in horticultural industries
		ADVH1.3	Identify supplies and materials used in horticulture
		ADVH2.0	Develop and implement a crop management plan
		ADVH2.1	Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems
		ADVH2.2	Determine the influence of environment factors of plants
		ADVH2.3	Develop and implement a plan for meeting plant nutrient needs
		ADVH2.4	Apply plant management practices
		ADVH2.5	Explain principles of specialized growing techniques
		ADVH3.0	Apply principles of design in plant systems to enhance an environment
		ADVH3.1	Select plants based on quality and function
		ADVH3.2	Create designs using plants
		ADVH3.3	Demonstrate proper use of plants in their environment
		ADVH3.4	Evaluate a design and provide feedback and suggestions for improvement
		ADVH4.0	Develop employability skills related to the Plant Systems Pathway
		ADVH4.1	Develop soft skills to enhance employability

LANDSCAPE DESIGN

Code	Old Standard	Code	New Standard
LDM1.0	Develop an outdoor environment based on the elements of design	*Course Discontinued	
LDM1.1	Design a landscaping plan based on design elements and principles		
LDM1.2	Choose materials and plants for a landscape design based on quality and stages of growth		
LDM2.0	Implement the fundamentals of plant design installation		
LDM2.1	Install plant material according to a landscape design		
LDM2.2	Install material as assigned by a landscape design		
LDM3.0	Use the fundamentals of plant care to maintain a landscaped area		
LDM3.1	Apply plant management practices in a landscape maintenance plan		
LDM3.2	Appraise a landscape area for water requirements		

GREENHOUSE MANAGEMENT

Code	Old Standard	Code	New Standard
GH1.0	Explain the historical and economic impact of the greenhouse industry	*Course discontinued	
GH1.1	Discuss the greenhouse industry, greenhouse careers and related technology of greenhouse production		
GH2.0	Discuss plant taxonomic classifications to depict anatomy and physiology		
GH2.1	Explain plant classifications based on plant anatomy and physiology		
GH3.0	Identify the parts of the greenhouse structures, controls for the greenhouse environment, lighting, equipment and irrigation systems		
GH3.1	Identify the components of various greenhouse structures		
GH3.2	Identify the different methods for controlling the greenhouse environment		
GH3.3	Explain the correct operation of greenhouse equipment and lighting		
GH3.4	Explain the use of different greenhouse watering and irrigation methods		
GH4.0	Demonstrate the relationship between growing media, plant nutrition and environmental conditions as they relate to plant growth and production		
GH4.1	Illustrate how root media and containers affect plant production		
GH4.2	Demonstrate how plant nutrition affects plant growth		
GH4.3	Interpret nutritional requirements and environmental conditions to develop and implement a fertilization plan		
GH5.0	Apply the principles of integrated pest management and chemical pest control methods		
GH5.1	Demonstrate a plan for integrated pest management (IPM)		
GH6.0	Experiment with methods of plant growth and reproduction		
GH6.1	Test appropriate materials to manage soil/media nutrients		
GH6.2	Differentiate the basic methods for reproducing and propagating plants		
GH6.3	Explain ho plant height is controlled by DIF (difference between the day temperature (DT) and night temperature (NT)		
GH7.0	Examine the fundamentals of production and harvesting to produce greenhouse crops		
GH7.1	Distinguish plant management practices for a production plan		
GH7.2	Demonstrate bedding plant production		
GH8.0	Discuss the principles of specialized growing techniques		
GH8.1	Discuss the basics of hydroponics and the operation of a hydroponics system		
GH8.2	Demonstrate the operation of different hydroponics systems		

FLORICULTURE

Code	Old Standard	Code	New Standard
FL1.0	Differentiate the factors and principles of the floriculture industry	*Course discontinued	
FL1.1	Identify the structure of the floriculture industry		
FL1.2	Relate how designs from historical periods influence contemporary floral designs		
FL1.3	Develop marketing and pricing strategies for retail floristry		
FL2.0	Illustrate the basic plant science principles that govern use of plants and flowers in the floriculture industry		
FL2.1	Demonstrate the factors involved in identifying plants and flowers		
FL2.2	Classify cut flowers and greens for use in floral arrangements		
FL2.3	Demonstrate how plant processes affect shelf life		
FL3.0	Demonstrate the basic mechanics and supplies used in floral design		
FL3.1	Demonstrate uses of tools and supplies used in floral design		
FL4.0	Create floral arrangements using the principles and elements of design		
FL4.1	Construct floral arrangements using the basic principles and elements of design		
FL4.2	Evaluate floral designs		

FUNDAMENTAL ANIMAL SCIENCE

Code	Old Standard	Code	New Standard
AN1.0	Examine animal anatomy and physiology	AN1.0	Examine animal anatomy and physiology
AN1.1	Classify animals	AN1.1	Recognize animals by species, gender or use
AN1.2	Recognize the anatomy of animal species to understand how the body structures interact	AN1.2	Identify the parts of an animal's anatomy
AN1.3	Analyze a subject animal to determine the nature of its health	AN2.0	Examine animal health
		AN2.1	Evaluate a subject animal to determine the nature of its health
AN2.0	Describe practices for safely working with animals	AN2.2	Understand proper usage and effects of animal health products
AN2.1	Describe practices for safely working with animals	AN3.0	Describe practices for safely working with animals
		AN3.1	Judge an animal's behavior to safely work with it
		AN3.2	Examine animal housing, equipment and handling facilities for the safety of animals and handlers
		AN3.3	Select management practices to reduce the effects of animal production on the environment
AN3.0	Distinguish elements of proper animal nutrition	AN4.0	Distinguish elements of proper animal nutrition
AN3.1	Describe an animals differing nutritional needs throughout its life cycle	AN4.1	Compare an animal's differing nutritional needs throughout its life cycle
AN3.2	Analyze a feed ration to determine whether or not it fulfills a given animals nutrient requirements	AN4.2	Prepare a feed ration to fulfill a given animal's nutrient requirements
AN4.0	Distinguish the factors that influence an animals reproductive cycle	AN5.0	Study the reproductive system of animals
AN4.1	Examine male and female reproductive systems	AN5.1	Examine male and female reproductive systems
AN4.2	Discuss reproductive cycles	AN5.2	Discuss reproductive cycles and breeding techniques
AN4.3	Evaluate an animal to determine breeding soundness	AN5.3	Evaluate an animal to determine breeding soundness and readiness
		AN6.0	Identify factors that affect an animal's performance
AN4.4	Predict genetic outcomes	AN6.1	Predict genetic outcomes
AN5.0	Identify environmental factors that affect an animals performance		
AN5.1	Recognize optimum performance for a given animal species	AN6.2	Determine optimum performance levels for a give animal species
AN5.2	Assess an animal to determine if it has reached its optimum performance level	AN6.3	Assess an animal to determine if it has reached its optimum performance level
AN6.0	Examine animal industry issues	AN7.0	Examine industry issues
AN6.1	Compare and contrast consumer concerns related to animal food products	AN7.1	Compare and contrast consumer concerns related to animal food products
AN6.2	Analyze consumer concerns related to animal welfare	AN7.2	Analyze consumer concern related to animal welfare
		AN8.0	Develop employability skills related to the animal systems pathway
		AN8.1	Develop soft skills to enhance employability

ADVANCED ANIMAL SCIENCE

Code	Old Standard	Code	New Standard
ADA1.0	Classify, evaluate and select animals for agricultural uses	ADAn5.0	Classify, evaluate and select animals based on anatomical and physiological characteristics
ADA1.1	Classify animals according to taxonomic and agricultural uses		
ADA1.2	Compare anatomy and physiology within various animal systems	ADAn5.1	Apply principles of anatomy and physiology to uses within various animal systems
		ADAn5.2	Identify and explain the relationships among the various systems of the body
ADA1.3	Select animals for specific agricultural purposes and maximum performance		
ADA2.0	Select proper health care practices for agricultural animals	ADAn1.0	Select proper health care practices for animals.
ADA2.1	Choose prevention and treatment programs for animal diseases, parasites and disorders	ADAn1.1	Choose prevention and treatment programs for animal diseases, parasites and disorders
ADA2.2	Discuss how to provide biosecurity for agricultural animals and facilities	ADAn1.2	Discuss how to provide biosecurity for animals, people, and facilities
ADA3.0	Develop proper nutrition management practices to optimize animal performance	ADAn2.0	Develop proper nutrition management practices to optimize animal performance
ADA3.1	Appraise nutritional elements as they affect animal performance		
ADA3.2	Assemble feed rations to provide for agricultural animals nutritional needs	ADAn2.1	Assemble feed rations to provide for an animal's nutritional needs
ADA4.0	Select reproductive practices to optimize animal production	ADAn3.0	Select reproductive practices to optimize animal production
ADA4.1	Judge animals for breeding readiness		
ADA4.2	Identify management practices in breeding that account for high quality animals	ADAn3.1	Identify management practices in breeding that account for high quality animals
ADA5.0	Distinguish the factors that influence safe animal handling procedures		
ADA5.1	Choose safe animal handling techniques		
ADA5.2	Examine animal housing, equipment and handling facilities for the safety of animals and handlers		
ADA5.3	Select management practices to reduce the effects of animal production on the environment		
		ADAn4.0	Articulate medical terminology as it relates to animals
		ADAn4.1	Recognize relevant medical terminology related to animals
		ADAn4.2	Apply medical terminology in the correct context
		ADAn6.0	Utilize principles of surgical techniques
		ADAn6.1	Identify surgical tools and supplies
		ADAn6.2	Apply proper surgical techniques to medical situations
		ADAn7.0	Develop employability skills related to the animal systems pathway
		ADAn7.1	Develop soft skills to enhance employability

COMPANION ANIMALS

Code	Old Standard	Code	New Standard
CA1.0	Examine the anatomy and physiology of animals in a domesticated or natural environment	CA1.0	Examine the anatomy and physiology of small animals
CA1.1	Use classification systems to explain the anatomy and physiology of companion animals	CA1.1	Use classification systems to explain the anatomy and physiology of companion animals
CA1.2	Differentiate between different species reproductive cycles	CA1.2	Differentiate between species' reproductive cycles
CA1.3	Analyze elements in the reproductive cycle to explain differences between male and female reproductive systems	CA1.3	Analyze elements between male and female reproductive systems
CA2.0	Evaluate an animals diet to provide proper nutrition and optimal performance	CA2.0	Evaluate an animal's diet to provide proper nutrition and optimal performance
	Evaluate an animals developmental stage to comprehend differences in nutrient requirements through the animals life cycle		Evaluate an animal's developmental stage to comprehend differences in nutrient requirements throughout the animal's life cycle
CA2.1	Analyze a feed ration to determine whether it fulfills a given animals nutrient requirements	CA2.1	Analyze a feed label/ration to determine whether it fulfills a given animal's nutrient requirements
CA2.2	Demonstrate techniques for optimal care of a companion animal	CA2.2	Demonstrate techniques for optimal care of an animal
CA3.0	Recognize optimum performance for a given animal species	CA3.0	Recognize optimum performance for a given animal species
CA3.1	Judge an animals behavior to safely work with it	CA3.1	Evaluate an animal's behavior to safely work with it
CA3.2	Employ a program to develop an animal to its highest potential	CA3.2	Design a program to develop an animal to its highest potential
CA3.3		CA4.0	Develop employability skills related to the animal systems pathway
		CA4.1	Develop soft skills to enhance employability

AGRIBUSINESS SALES

Code	Old Standard
ABSM1.0	Demonstrate the skills necessary to obtain and keep gainful employment in agribusiness occupations
ABSM1.1	Use written and oral skills to seek and obtain an agricultural job
ABSM1.2	Apply knowledge of personality traits and development to improve
ABSM2.0	Evaluate sales and marketing principles used to accomplish marketing objectives
ABSM2.1	Write a marketing plan for a product based on marketing objectives
ABSM2.2	Merchandise products and services to meet the needs of a customer
ABSM3.0	Use computer technology and documents to manage agribusiness inventory
ABSM3.1	Apply reading comprehension, writing and math skills in inventory management
ABSM4.0	Evaluate opportunities for marketing of agricultural products throughout the world
ABSM4.1	Locate areas of agricultural importance and determine the competitive advantage for production of agricultural products
ABSM4.2	Develop an awareness of food production and global needs to determine how needs can be met
ABSM4.3	Examine the process in developing nations as trading partners for the goal of exploring potential foreign trade

Code	New Standard
ASM1.0	Demonstrate the skills necessary to obtain and keep gainful employment in agribusiness occupations.
ASM1.1	Use written and oral skills to seek and obtain an agricultural job Use marketable skills such as reliability and communications to improve self and to develop steps for systematic problem solving
ASM1.2	problem solving
ASM2.0	Evaluate sales and marketing principles used to accomplish marketing objectives
ASM2.1	Write a marketing plan for a product based on marketing objectives
ASM2.2	Merchandise products and services to meet the needs of a customer
ASM3.0	Use technology and documents to manage agribusiness inventory
ASM3.1	Apply reading comprehension, writing, and math skills in inventory management
ASM3.2	Analyze inventory data to determine acceptable business inventory stocking levels to manage business efficiency
ASM4.0	Evaluate opportunities for marketing of agricultural products throughout the world Locate areas of agricultural importance and determine the competitive advantage for production of agricultural products
ASM4.1	products
ASM4.2	Develop an awareness of food production and global needs to determine how those needs can be met
ASM4.3	Investigate the process in developing international trading partners
ASM5.0	Use sales and marketing principles to accomplish AFNR business objectives
ASM5.1	Analyze the roles of markets, trade, competition and price in relation to an AFNR business sales marketing plan
ASM5.2	Assess and apply sales principles and skills to accomplish AFNR business
ASM5.3	Assess marketing principles and develop marketing plans to accomplish AFNR business objectives

AGRIBUSINESS MANAGEMENT

Code	Old Standard	Code	New Standard
*New Course		AM1.0	Introduce the components of agribusiness management
		AM1.1	Explain key business types and management principles and issues for the agribusiness enterprise
		AM1.2	Present an overview of the knoweldeg and skills needed to work effectively within the agribusiness enterprises
		AM1.3	Demonstrate leadership skills to accomplish goals and objectives in an agribusiness environment
		AM2.0	Use record keeping to accomplish AFNR business objectives, manag budgets and comply with laws and regulations
		AM2.1	Distinguish key accounting fundamentals to accomplish dependable bookkeeping and associated files
		AM2.2	Analyze and interpret agricultural policies in relation to their effects on the agribusiness management and agribusiness enterprises
		AM3.0	Plan a marketing program utilizing various methods for sales of agricultural products
		AM3.1	Explore strategies for optimum marketing of agricultural commmodities
		AM3.2	Analyze budge and forecast models to determine optimal business marketing strategies, and performances
		AM4.0	Manage cash budgets, credit budgets, and credit for an AFNR business using generally accepted accounting principles
		AM4.1	Develop, assess and manage cash budgets to achieve AFNR business goals
		AM4.2	Analyze credit needs and manage credit budgets to achieve AFNR business goals

AGRIBUSINESS ENTREPRENEURSHIP

Code	Old Standard	Code	New Standard
E1.0	Demonstrate leadership skills to accomplish goals and objectives in an agribusiness environment	*Course discontinued	
E1.1	Develop a mission statement and business plan to guide business activities effectively		
E1.2	Develop management skills necessary to accomplish general business activities		
E1.3	Apply technology and information technology strategies for business improvement		
E2.0	Analyze generally accepted accounting principles and skills to manage finances and agribusiness assets		
E2.1	Distinguish key accounting fundamentals to accomplish dependable bookkeeping and associated files		
E2.2	Monitor inventory levels to accomplish practical inventory control		
E3.0	Plan a marketing program utilizing various methods for sales of agricultural products		
E3.1	Use strategies for optimum marketing of agricultural commodities		

AG LEADERSHIP

Code	Old Standard	Code	New Standard
*New course combines Ag Leadership and Ag Communications			
LPD1.0	Develop a personal improvement plan for professional and personal success	ALC1.0	Act as a responsible and contributing citizen and employee in the AFNR sector
LPD1.1	Identify a program for personal growth	ALC1.1	Model personal responsibility in the workplace and community
LPD1.2	Demonstrate soft skills for career success	ALC1.2	Demonstrate soft skills for career success
		ALC1.3	Apply appropriate academic and technical skills
LPD2.0	Develop the necessary knowledge and skills for active participation in a membership organization		
LPD2.1	Explain critical components of the National FFA Organization and its history	ALC2.2	Model proper use of basic parliamentary procedure
LPD2.2	Employ proper use of parliamentary procedure		
LPD2.3	Design a personal participation plan for involvement in the National FFA Organization	ALC2.0	Apply and model teamwork and leadership skills in work groups
LPD3.0	Demonstrate teamwork and leadership skills in work groups	ALC2.1	Employ leadership skills to accomplish team goal
LPD3.1	Employ leadership skills to accomplish a team goal		Contribute to team-oriented projects and build consensus to accomplish results using cultural global competence in the workplace and community.
LPD3.2	Contribute to a team through a career-based mock-situation	ALC2.4	Exhibit cooperative spirit when working in a group situation
LPD3.3	Exhibit a cooperative spirit when working in a work group	ALC2.3	
LPD4.0	Use the appropriate venues to communicate information effectively		
LPD4.1	Communicate positive agricultural information to the public	ALC4.0	Communicate information relevant to agriculture clearly, effectively, and with reason
LPD4.2	Employ public speaking skills to communicate an important agricultural message	ALC4.2	Produce clear, reasoned and coherent written, verbal or visual communication for formal or informal settings.
		ALC4.1	Demonstrate basic information research skills and techniques
		ALC3.0	Model integrity, ethical leadership and effective management
		ALC3.1	Model characteristics of ethical and effective leaders in the workplace and community
		ALC3.2	Implement personal management skills to function effectively and efficiently in the workplace
		ALC3.3	Demonstrate behaviors that contribute to a positive morale and culture in the workplace and community
		ALC5.0	Use technology to enhance productivity
			Research, select, and use new technologies, tools and applications to maximize productivity in the workplace and community.
		ALC5.1	
		ALC5.2	Utilize technology to advocate for agriculture and the FFA
			Evaluate personal and organizational risks of technology use and take actions to prevent or minimize risks in the workplace and community
		ALC5.3	

AG COMMUNICATIONS

Code	Old Standard	Code	New Standard
		*New course combines Ag Leadership and Ag Communications	
		ALC1.0	Act as a responsible and contributing citizen and employee in the AFNR sector
		ALC1.1	Model personal responsibility in the workplace and community
		ALC1.2	Demonstrate soft skills for career success
		ALC1.3	Apply appropriate academic and technical skills
		ALC2.0	Apply and model teamwork and leadership skills in work groups
		ALC2.1	Employ leadership skills to accomplish team goal
		ALC2.2	Model proper use of basic parliamentary procedure
		ALC2.3	Exhibit cooperative spirit when working in a group situation
			Contribute to team-oriented projects and build consensus to accomplish results using cultural global competence in the workplace and community.
		ALC2.4	
		ALC3.0	Model integrity, ethical leadership and effective management
		ALC3.1	Model characteristics of ethical and effective leaders in the workplace and community
		ALC3.2	Implement personal management skills to function effectively and efficiently in the workplace
		ALC3.3	Demonstrate behaviors that contribute to a positive morale and culture in the workplace and community
AC1.0	Distinguish major changes in the agriculture industry		
AC1.1	Ask appropriate, focused, and subject related questions to interpret the intent of the communication	ALC4.0	Communicate information relevant to agriculture clearly, effectively, and with reason
AC1.2	Demonstrate basic news research	ALC4.1	Demonstrate basic information research skills and techniques
		ALC4.2	Produce clear, reasoned and coherent written, verbal or visual communication for formal or informal settings.
AC2.0	Write in various styles of journalism		
AC2.1	Describe the elements of a good agricultural news story		
AC2.2	Compose an agricultural news story		
AC2.3	Edit an agricultural news story		
AC3.0	Implement major technologies used the agriculture communications industry	ALC5.0	Use technology to enhance productivity
			Research, select, and use new technologies, tools and applications to maximize productivity in the workplace and community.
AC3.1	Utilize computer technology and associated software as it relates to the agriculture communications industry	ALC5.1	
AC3.2	Utilize basic photographic media to enhance agriculture communications	ALC5.2	Utilize technology to advocate for agriculture and the FFA
			Evaluate personal and organizational risks of technology use and take actions to prevent or minimize risks in the workplace and community
AC3.3	Demonstrate basic layout procedures	ALC5.3	
AC4.0	Assume the role of the public speaker and/or a public spokesperson		
AC4.1	Perform the basic skills in public speaking		
AC5.0	Identify common agriculture communications careers		
AC5.1	Recognize common agricultural communication jobs in the public and private sectors		

FOOD SCIENCE

Code	Old Standard	Code	New Standard
FS1.0	Examine the makeup of the food industry	FS1.0	Examine the makeup of the food industry
FS1.1	Differentiate the evolution of the food industry	FS1.1	Investigate advancements in food science techniques
FS1.2	Identify industry organizations and their impact on the food industry	FS1.2	Identify organizations and their impact on the food industry
FS2.0	Apply safety and sanitation procedures for food products	FS2.0	Apply safety and sanitation procedures for food production
FS2.1	Describe proper safety and sanitation practices when working with food products	FS2.1	Describe proper safety and sanitation practices when working with food products
FS2.2	Apply safety and sanitation practices used in the food industry	FS2.2	Apply safety and sanitation practices used in the food industry
		FS2.3	Identify origins of food borne pathogens and effective prevention and control methods
FS3.0	Apply the principles of science to producing safe, wholesome and nutritious food products	FS3.0	Apply principles of science of producing safe, wholesome and nutritious food products
FS3.1	Explain the application of chemistry and physics to food science	FS3.1	Apply fundamental chemistry to food science
FS3.2	Differentiate the makeup of food products	FS3.2	Differentiate the makeup of food products
FS3.3	Construct a food product that meets the standards of regulatory agencies	FS3.3	Develop a food product that meets the standards of regulatory agencies
		FS4.0	Develop employability skills related to the Food Product and Processing Systems
		FS4.1	Develop soft skills to enhance employability

AG PROCESSING

Code	Old Standard
AGP1.0	Examine the makeup of the food processing industry
AGP1.1	Differentiate the evolution of the food processing industry
AGP1.2	Discuss how food safety is addressed in the food processing industry
AGP1.3	Explain how regulatory agencies in the food industry work to protect consumers
AGP2.0	Demonstrate operational procedures used in the food processing industry
AGP2.1	Translate regulatory procedures as they apply to food processing
AGP2.2	Demonstrate worker safety procedures for food processing equipment
AGP3.0	Process foods for storage, distribution and consumption
AGP3.1	Classify processed food products
AGP3.2	Utilize industry harvesting, selection and inspection techniques
AGP3.3	Describe the fundamental procedural knowledge and skills of the food processing industry
AGP3.4	Process food safely

Code	New Standard
AgP1.0	Examine the makeup of the food processing industry.
AgP1.1	Investigate the evolution of the food processing industry
AgP1.2	Discuss how food safety is addressed in the food processing industry
AgP1.3	Explain how regularly agencies in the food industry work to protect consumers
AgP2.0	Demonstrate operational procedures used in the food industry
AgP2.1	Translate regulatory procedures as they apply to food processing
AgP2.2	Demonstrate worker safety procedures for food processing equipment
AgP3.0	Process foods for storage, distribution and consumption
AgP3.1	Classify processed food products
AgP3.2	Utilize industry harvesting, selection and inspection techniques
AgP3.3	Describe the steps involved with producing various food products
AgP3.4	Process food safely
AgP4.0	Develop employability skills related to the Food Product and Processing Systems
AgP4.1	Develop soft skills to enhance employability

AG BIOTECH

Code	Old Standard	Code	New Standard
B1.0	Illustrate the importance of biotechnology and the scientific processes involved in biotechnology discoveries	AB1.0	Assess factors that have influenced the evolution of biotechnology in agriculture
B1.1	Illustrate the meaning and effects of biotechnology for human benefit	AB1.1	Investigate and explain the relationships among past, current, and emerging application of biotechnology in agriculture
B1.2	Employ proper protocol for aseptic technique	AB1.2	Evaluate the scope and implications of regulatory agencies on application of biotechnology in agriculture and protection of public interests
		AB1.3	Analyze the relationships and implications of bioethics, laws, and public perceptions on applications of biotechnology in agriculture
B2.0	Illustrate the functions and importance of biotechnology at the cellular level	AB2.0	Illustrate the functions and importance of biotechnology at the cellular level
B2.1	Recognize components of cells and their application to genetic improvement	AB2.1	Recognize components of cells and their application to genetic improvement
B2.2	Illustrate the role of cell structures in genetic theory	AB2.2	Illustrate the role of cell structures in genetic theory
B3.0	Demonstrate developments and procedures used in biotechnology affecting plants, plant growth and genetic alteration	AB3.0	Safely apply appropriate skills to complete tasks in a biotechnology research and development environment
B3.1	Apply procedures used in biotechnology to plant processes	AB3.1	Read, document, evaluate and secure accurate laboratory records or experimental protocols, observations, and results
B3.2	Demonstrate procedures used in biotechnology to plant propagation	AB3.2	Implement standard operating procedures (SOP) for the biotechnology sector
B4.0	Evaluate developments and procedures used in biotechnology affecting animals, animal growth and genetic alteration	AB4.0	Analyze the application of biotechnology to solve problems in Agriculture, Food and Natural Resources (AFNR) systems.
B4.1	Evaluate procedures used in biotechnology in animal reproduction	AB4.2	Investigate biotechnology principles, techniques and processes to enhance animal systems
B4.2	Examine procedures used in biotechnology in animal disease management	AB4.1	Investigate biotechnology principles, techniques and processes to enhance plant systems
B4.3	Evaluate procedures used in biotechnology in animal systems alteration	AB4.3	Investigate biotechnology principles, techniques, and processes to enhance food products and processing systems
		AB4.4	Investigate biotechnology principles, techniques, and processes to enhance natural resources and environmental service systems
B5.0	Interpret developments and procedures used in biotechnology affecting the environment		
B5.1	Apply procedures used in biotechnology in the environment		
B6.0	Defend/Argue the ethical issues in biotechnology and identify the benefits and concerns of society		
B6.1	Evaluate controversial issues of biotechnology as they apply to the human race		
			Develop employability skills related to the Animal, Food Product and Processing, Plant and Natural Resources and Environmental Science Systems
		AB5.0	Environmental Science Systems
		AB5.1	Develop soft skills to enhance employability

AGRISCIENCE

Code	Old Standard	Code	New Standard
AS1.0	Examine agriculture industries of the past, present and future	*Course discontinued	
AS1.1	Appraise the fundamentals of the agriculture industry and its impact in the world		
AS1.2	Compare personal skills for success in agricultural careers		
AS2.0	Demonstrate the methods to control the plant environment, plant selection and plant culture techniques		
AS2.1	Demonstrate basic methods for controlling the plant environment		
AS2.2	Demonstrate plant cultural procedures		
AS3.0	Differentiate the classification of plants, plant parts and plant functions		
AS3.1	Examine the major parts of a plant and their important functions		
AS3.2	Demonstrate the cycle of food production in a plant		
AS3.3	Compare the methods used by plants to reproduce		
AS3.4	Compare the approved practices recommended for grain, oil and specialty field-crop production		
AS4.0	Investigate animal science in the agricultural industry		
AS4.1	Explore the animal science industry for both large and small animals		
AS4.2	Examine the uses, care and management of animals both large and small		
AS5.0	Compare animal anatomy, physiology and nutrition		
AS5.1	Distinguish the anatomy and physiology of animals		
AS5.2	Recognize the nutritional requirements of specific animals and how to satisfy those requirements		
AS6.0	Examine the factors that determine animal health and sound reproductive practices		
AS6.1	Demonstrate how to best maintain animal health		
AS6.2	Examine the role of genetics and reproduction in animal health agriscience today		
AS7.0	Examine the factors in specialty livestock and horse management		
AS7.1	Investigate the history, types, uses, care and management of dairy cattle		
AS7.2	Interpret the role of horses in our society, how to care for and manage them		

FUNDAMENTAL AG MECHANICS

Code	Old Standard	Code	New Standard
FAM1.0	Apply safety practices in mechanical applications	FAM1.0	Apply safety practices in mechanical applications
FAM1.1	Explain the safe operation and servicing of machinery and equipment	FAM1.1	Explain the safe operation and servicing of machinery and equipment
FAM1.2	Use construction/fabrication tools to demonstrate safe operation and proper skills	FAM1.2	Demonstrate safe operation of construction/fabrication tools
FAM2.0	Maintain mechanical equipment, power and agricultural technology	FAM2.0	Identify maintenance procedures & schedules for mechanical equipment, power and agricultural technology
FAM2.1	Perform service routines to maintain machinery and equipment	FAM2.1	Identify parts and explain functions of various mechanical systems
FAM2.2	Troubleshoot problems in mechanical systems	FAM2.3	Troubleshoot problems in mechanical systems
FAM2.3	Repair internal combustion engines	FAM2.2	Investigate common maintenance schedules and practices for equipment
FAM2.4	Repair hydraulic and pneumatic systems	FAM3.0	Demonstrate basic skills in project planning and metal fabrication
FAM3.0	Demonstrate basic skills in project planning and metal fabrications	FAM3.1	Create sketches of metal projects
FAM3.1	Create sketches of agricultural equipment	FAM3.2	Demonstrate basic welding principles and techniques
FAM3.2	Employ ag metal fabrication principles	FAM3.3	Employ metal fabrication principles to create a metal project
FAM4.0	Apply electrical principles in agricultural applications	FAM4.0	Apply electrical principles in agricultural applications
FAM4.1	Recognize the components and functions of electrical systems	FAM4.1	Recognize the components and functions of electrical systems
FAM4.2	Demonstrate fundamental principles of electricity	FAM4.2	Demonstrate fundamental principles of electricity
		FAM5.0	Investigate emerging agricultural technologies
		FAM5.1	Investigate new and/or existing technology in agriculture
		FAM6.0	Develop employability skills related to the Power, Structural, and Technical Systems Pathway
		FAM6.1	Develop soft skills to enhance employability

AG POWER TECHNOLOGY

Code	Old Standard	Code	New Standard
			*Course Name Changed to Ag Systems Technology
APT1.0	Apply physical science principles to engineering with mechanical equipment, power utilization and technology	AST1.0	Apply engineering principles to mechanical equipment, power utilization and technology
APT1.1	Compare power generation to energy sources	AST1.1	Compare power generation from various energy sources
APT1.2	Apply principles of lubricants to sort and classify lubricants	AST1.2	Investigate various properties of lubricants needed in ag mechanics
APT2.0	Apply principles of operation and maintenance to mechanical equipment, power utilization and technology	AST2.0	Apply principles of operation and maintenance to mechanical equipment, power utilization and technology
APT2.1	Perform scheduled service routines to maintain machinery and equipment	AST2.1	Explain the importance of scheduled service routines to maintain machinery and equipment
APT2.2	Observe the rules of the road to operate machinery and equipment	AST2.2	Demonstrate suggested inspections on machinery and/or equipment
APT3.0	Examine principles of service and repair to mechanical and electrical equipment, power utilization and technology	AST3.0	Examine principles of service and repair to mechanical and electrical equipment, power utilizations and technology
APT3.1	Evaluate performance to service and repair the components of internal combustion engines	AST3.1	Evaluate internal combustion engines to assess needed service and repair
APT3.2	Interpret manufacturer guidelines to service and repair power transmission systems	AST3.2	Investigate service and repair specifications for operating systems
APT3.3	Service hydraulic systems		
APT3.4	Service vehicle electrical systems		
APT3.5	Use company diagrams and schematics to service vehicle heating and air conditioning systems		
APT3.6	Evaluate performance parameters to service and repair steering, suspension, traction and vehicle performance systems		
APT3.7	Diagnose problems associated with small gas engines		
APT3.8	Diagnose problems associated with tractors		
APT3.9	Illustrate various electric motor types, operations and maintenance	AST3.4	Explore electric motor types, operation and maintenance
		AST4.0	Analyze emerging agriculture technologies
		AST4.1	Analyze how emerging agriculture technologies have affected AFNR industries
		AST5.0	Develop employability skills related to the Power, Structural and Technical Systems Pathway
		AST5.1	Develop soft skills to enhance employability

FUNDAMENTAL AG STRUCTURES

Code	Old Standard	Code	New Standard
AGS1.0	Use safe practices associated with agriculture structures	AgS1.0	Use safe practices associated with agriculture structures
AGS1.1	Demonstrate safe use and proper skills in the construction of agriculture structures	AgS1.1	Demonstrate safe use of tools and equipment while constructing agriculture structures
AGS2.0	Write plans for a project	AgS2.0	Develop plans for an agriculture structure project
AGS2.1	Use computer skills and drafting tools to develop sketches and plans	AgS2.1	Use computer skills or drafting tools to develop sketches and plans for an ag structure
AGS3.0	Examine structural requirements to estimate project costs	AgS3.0	Examine various materials required for an agricultural structure
		AgS3.1	Investigate the differences in materials needed to assemble an ag structure
AGS3.1	Write a complete materials list and project cost estimate	AgS3.2	Demonstrate knowledge of structural materials by developing a supply list, along with cost estimates for a given project
AGS4.0	Construct an agriculture structure	AgS4.0	Construct an agriculture structure
AGS4.1	Assemble components of a structure	AgS4.1	Assemble components of a structure
		AgS4.2	Create a complete agriculture structure by combining individually constructed components
AGS5.0	Demonstrate electrical principles	AgS5.0	Demonstrate electrical principles
		AgS5.1	Explain basic electrical terms and principles
AGS5.1	Use applicable instruments to demonstrate knowledge of basic electricity	AgS5.2	Use applicable instruments to demonstrate knowledge of basic electricity
AGS5.2	Demonstrate wiring and electrical applications	AgS5.3	Demonstrate wiring and electrical applications
AGS6.0	Use soil and water engineering descriptions and equipment	AgS6.0	Analyze properties and conditions of building site prior to construction
AGS6.1	Perform legal land descriptions	AgS6.1	Examine legal land descriptions and plat maps
		AgS6.2	Examine geographical characteristics of building site
AGS6.2	Operate surveying equipment	AgS6.3	Operate surveying equipment
		AgS7.0	Analyze various concrete and masonry concepts
		AgS7.1	Identify tools and materials used in concrete and masonry projects
		AgS8.0	Explore career opportunities in agricultural structures and mechanics
		AgS8.1	Investigate career opportunities that pertain to agricultural structures
		AgS8.2	Develop soft skills to enhance employability

AG METAL FABRICATION

Code	Old Standard	Code	New Standard
AMF1.0	Demonstrate the basics of metal fabrication	AMF1.0	Demonstrate the basics of metal fabrication
AMF1.1	Discuss metal fabrication, related technologies and careers	AMF1.1	Demonstrate knowledge of metal fabrication techniques and relate technologies
AMF1.2	Prepare different types of metal for welding	AMF1.2	Prepare various metals for welding
AMF1.3	Create plans for project construction	AMF1.3	Create plans for metal project construction
AMF2.0	Demonstrate the principles of Shielded Metal Arc Welding (SMAW) and the correct operation of the SMAW equipment	AMF2.0	Demonstrate the principles of Shielded Metal Arc Welding (SMAW) and the correct operation of SMAW equipment
AMF2.1	Perform Shielded Metal Arc Welding (SMAW)	AMF2.1	Perform Shielded Metal Arc Welding (SMAW) techniques
AMF3.0	Demonstrate the principles of Metal Inert Gas (MIG) welding, also known as Gas Metal Arc Welding (GMAW), and the correct operation of MIG equipment	AMF3.0	Demonstrate the principles of Metal Inert Gas (MIG) welding, also known as Gas Metal Arc Welding (GMAW) and the correct operation of MIG equipment
AMF3.1	Perform metal inert gas (MIG) welding	AMF3.1	Perform metal inert gas (MIG) welding techniques
AMF4.0	Demonstrate the principles of oxyacetylene welding and the correct operation of oxyacetylene equipment	AMF4.0	Understand the correct operations of oxyacetylene equipment
AMF4.1	Perform oxyacetylene welding and brazing	AMF4.1	Explore oxyacetylene welding, cutting and brazing
AMF5.0	Demonstrate the principles of plasma cutting and the correct operation of plasma cutting equipment	AMF5.0	Explore advanced welding processes
AMF5.1	Perform plasma cutting	AMF5.1	Investigate and explain principles of advanced welding processes (Tungsten Inert Gas (TIG) welding, plasma cutting)
AMF6.0	Demonstrate principles of specialized welding equipment through Tungsten Inert Gas (TIG) welding, also known as Gas Tungsten Arc Welding (GTAW) and the correct operation of this specialized equipment	AMF6.0	Develop employability skills related to the Power, Structural and Technical Systems Pathway
AMF6.1	Perform tungsten inert gas (TIG) welding	AMF6.1	Develop soft skills to enhance employability
		AMF6.2	Investigate careers related to metal fabrication

[REDACTED]

rect operation of MIG equipment

ADVANCED AG STRUCTURES

Code	Old Standard	Code	New Standard
ADS1.0	Use safe practices associated with planning and constructing agricultural structures	AdS1.0	Use safe practices when planning, maintaining, and constructing agricultural structures
ADS1.1	Demonstrate safe use and proper skills necessary in the construction of agricultural structures	AdS1.1	Demonstrate safe use of tools and equipment while constructing agriculture structures
ADS1.2	Demonstrate safe use of machinery and equipment	AdS1.2	Demonstrate understanding of tool repair and maintenance
ADS2.0	Service and repair mechanical equipment and structures	AdS2.0	Service and repair mechanical equipment and structures
ADS2.1	Inspect schematics to service electrical systems	AdS2.1	Analyze schematics to service various systems in an ag structure
ADS3.0	Write structural plans to meet specifications and building codes	AdS3.0	Utilize a structural plan that meets specifications and building codes
ADS3.1	Examine blueprints and local codes to develop an applicable construction plan	AdS3.1	Examine blueprints and local codes that identify required components of an ag structure
		AdS3.2	Design a construction plan for an agricultural structure
ADS4.0	Use plans to guide facility design and construction	AdS4.0	Use plans to guide construction of agricultural structures
ADS4.1	Design buildings and facilities	AdS4.1	Use architectural and mechanical plans to construct agricultural buildings or facilities
ADS4.2	Use architectural and mechanical plans to construct agricultural buildings and facilities		
ADS5.0	Use a variety of concrete and masonry products	AdS5.0	Apply a variety of concrete and masonry concepts to various projects
ADS5.1	Demonstrate concrete and masonry procedures	AdS5.1	Demonstrate concrete and masonry procedures
ADS6.0	Use a variety of plumbing materials	AdS6.0	Investigate a variety of plumbing tools and products
ADS6.1	Use various techniques of plumbing	AdS6.1	Identify tools and materials used for plumbing
		AdS6.2	Demonstrate various plumbing techniques
		AdS7.0	Develop employability skills related to the Power, Structural and Technical Systems Pathway
		AdS7.1	Develop soft skills to enhance employability

WILDLIFE & FISHERIES

Code	Old Standard
WF1.0	Demonstrate the importance of fish and wildlife management, including their respective habitats
WF1.1	Apply knowledge of natural resource components to the management of wildlife and fish
WF1.2	Identify fish and wildlife species
WF1.3	Identify healthy habitat for wildlife and fish
WF2.0	Identify economic and social issues related to fish and wildlife
WF2.1	Discuss the importance of hunting/harvesting fish and wildlife species and the related responsibility
WF2.2	Demonstrate processing techniques to use game and fish as food sources
WF2.3	Dramatize safety practices related to wildlife and fish
WF3.0	Compare life patterns of fish and wildlife
WF3.1	Differentiate fish and wildlife function and form in their daily lives
WF3.2	Identify seasonal rituals of fish and wildlife species
WF3.3	Diagnose wildlife and fish diseases

Code	New Standard
WF1.0	Demonstrate the importance of fish and wildlife management, including their respective habitats
WF1.1	Apply knowledge of natural resource components to the management of wildlife and fish
WF1.2	Identify fish and wildlife species
WF1.3	Identify healthy habitat for wildlife and fish
WF2.0	Identify economic and social issues related to fish and wildlife
WF2.1	Discuss hunting/harvesting fish and wildlife species as a management technique
WF2.2	Demonstrate processing techniques to use game and fish as food sources
WF2.3	Distinguish safety practices related to hunting and fishing activities
WF3.0	Compare life patterns of fish and wildlife
WF3.1	Differentiate fish and wildlife function and form in their daily lives
WF3.2	Identify seasonal rituals of fish and wildlife species
WF3.3	Diagnose wildlife and fish diseases
WF4.0	Investigate careers in wildlife and fisheries conservation
WF4.1	Locate, identify, research and interpret career information
WF4.2	Compare and contrast characteristics of various careers

NATURAL RESOURCES

Code	Old Standard	Code	New Standard
			*Course name changed to Fundamental Natural Resources
NR1.0	Examine the importance of resource and human interrelations to conduct management activities in natural habitats	FNR1.0	Examine the importance of resources and human interrelations to conduct management activities in natural habitats
NR1.1	Explain resource management components to establish relationships in natural resource systems	FNR1.1	Explain resource management components to establish or enhance relationships in natural resource systems
NR1.2	Apply cartographic skills to natural resource activities	FNR1.2	Apply Geographic Information Systems (GIS) skills to natural resource activities
NR1.3	Examine planning data to determine natural resource status	FNR1.3	Examine planning data to determine natural resource status
NR1.4	Demonstrate environmental and natural resource knowledge to enhance natural resources		
NR1.5	Discuss weather and other criteria to recognize dangers related to work in an outdoor environment	FNR1.4	Discuss weather and other criteria to recognize dangers related to work in an outdoor environment
NR2.0	Interpret scientific principles to natural resource management activities	FNR2.0	Interpret scientific principles of natural resource management activities
NR2.1	Describe biological and physical characteristics to identify and classify plant-based natural resources	FNR2.1	Identify and classify plant- and animal-based natural resources
NR2.2	Identify natural cycles and related phenomena to describe ecologic concepts and principles	FNR2.2	Identify natural cycles and related phenomena to describe ecologic concepts and principles
NR2.3	Describe soil compositions and properties	FNR2.3	Describe soil compositions and properties
NR2.4	Examine wetland, watershed and groundwater properties, classifications and functions	FNR2.4	Examine wetland, watershed, and groundwater properties, classifications and functions
NR2.5	Discuss forestry management techniques	FNR2.5	Discuss forestry management techniques
NR3.0	Describe production practices and processing procedures for natural resources	FNR3.0	Describe production practices and processing procedures for natural resources
NR3.1	Describe how natural resource products are produced, harvested, processed and used	FNR3.1	Describe how natural resource products are produced, harvested, processed and used
NR4.0	Explain responsible practices to protect natural resources	FNR4.0	Explain responsible practices to protect natural resources
NR4.1	Describe techniques and equipment needed to manage fires	FNR4.1	Describe techniques and equipment needed to manage and conserve natural resources
NR4.2	Discuss animal and plant disease symptoms and prevention	FNR4.2	Discuss animal and plant disease symptoms and prevention
NR4.3	Recognize insect types and available controls to prevent insect infestation	FNR4.3	Recognize insect types and available controls to prevent insect infestation

ENVIRONMENTAL SCIENCE

Code	Old Standard	Code	New Standard
ES1.0	Examine ecological principles and functions	*Core content course; No standards revisions.	
ES1.1	Examine the structure and function of ecosystems		
ES1.2	Analyze the major biomes of the earth and the biodiversity associated with these biomes		
ES1.3	Analyze population dynamics		
ES2.0	Evaluate human population dynamics on the environment		
ES2.1	Evaluate factors affecting the human population		
ES2.2	Evaluate the consequences of human population growth		
ES2.3	Evaluate approaches that address over-population		
ES3.0	Appraise our natural resources, their conservation and management		
ES3.1	Explain the types, uses and history of renewable and nonrenewable resources		
ES3.2	Assess methods of conservation of common non-energy natural resources		
ES3.3	Examine the impact of waste production and management on the environment		
ES4.0	Examine energy sources and their conservation		
ES4.1	Compare and contrast conventional and alternative energy resources		
ES4.2	Examine the types of energy-related pollution		
ES4.3	Compare various methods of energy conservation		
ES5.0	Examine consequences of human interaction with the environment		
ES5.1	Examine the causes, environmental effects and methods for controlling pollution		
ES5.2	Examine environmental impact on human health		
ES5.3	Appraise the sustainability of human practices as they relate to water quality, agriculture/forestry/fishing, mining, energy and land use.		
ES6.0	Appraise personal and civic responsibility with regard to the environment		
ES6.1	Evaluate personal views concerning the environment		
ES6.2	Evaluate the rights and responsibilities of citizens in maintaining a healthy environment		

ADVANCED NATURAL RESOURCES

Code	Old Standard	Code	New Standard
*New Course		ANR1.0	Explore soil composition and soil management
		ANR1.1	Demonstrate techniques used to classify soils
		ANR1.2	Explain the importance of soil conservation
		ANR1.3	Analyze soils for agricultural and home site uses
		ANR1.4	Analyze existing soil surveys to develop effective management plans
		ANR2.0	Apply ecological concepts and principles to rangeland conservation
			Summarize the interrelationships of rangeland management, the environment, wildlife management, and the livestock industry
		ANR2.1	
		ANR2.2	Discuss practices used to improve rangeland quality
		ANR2.3	Analyze the carrying capacity in various rangelands for both wildlife species and domestic livestock
		ANR2.4	Identify plants important to quality rangeland and determine rangeland condition
		ANR3.0	Understand forest management practices
		ANR3.1	Identify trees and classify to species
		ANR3.2	Discuss forestry management techniques
		ANR4.0	Apply ecological concepts and principles to fisheries and wildlife in natural resources
		ANR4.1	Identify similarities and differences among wildlife and fish species
		ANR4.2	Investigate wildlife management and habitat
		ANR4.3	Differentiate among a variety of management practices used to manage wildlife populations
		ANR4.4	Enhance fish/wildlife habitat
		ANR5.0	Understand air and water use, examine management practices and develop conservation strategies
		ANR5.1	Explain the government's role in regulating air and water quality
		ANR5.2	Define appropriate water conservation measures
		ANR5.3	Analyze the way in which water and air management affect the environment and human needs
		ANR5.4	Measure and assess water and air quality parameters using federal, tribal, state and/or local standards
		ANR6.0	Develop plans to ensure sustainable production and processing of natural resources
			Explain methods used to sustainably produce, harvest, process, and use natural resource products (e.g. forest products, wildlife, minerals, fossil fuels, shale oil, alternative energy, recreation, aquatic species, etc.)
		ANR6.1	
		ANR6.2	Compare the various production methods of alternative energy sources, both renewable and non-renewable, and their relations to economic, environmental and social sustainability
		ANR6.3	Evaluate methods used to extract and process minerals for economic, environmental, and social sustainability