

NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

Agricultural Education

Grade: Grade 9 - 12

Course: Animal Science I

NCCTE.AA21 - Animal Science I

NCCTE.AA21.01.00 - Understand leadership opportunities in animal science.

NCCTE.AA21.01.01 - Understand organizations available for students in animal science.

NCCTE.AA21.01.02 - Understand parliamentary procedure abilities and public speaking skills.

NCCTE.AA21.02.00 - Understand careers in the animal science industry.

NCCTE.AA21.02.01 - Remember animal science careers.

NCCTE.AA21.02.02 - Understand the importance of SAE to work based learning.

NCCTE.AA21.03.00 - Remember terminology relevant to animal agriculture.

NCCTE.AA21.03.01 - Recall animal breed and sex terminology.

NCCTE.AA21.03.02 - Recall retail and wholesale cuts of meat.

NCCTE.AA21.04.00 - Understand agriculture animals

NCCTE.AA21.04.01 - Classify traits for selection of animals.

NCCTE.AA21.04.02 - Understand quality features of beef, pork and poultry.

NCCTE.AA21.05.00 - Understand the impact of animal agriculture.

NCCTE.AA21.05.01 - Explain the economic impact of animal agriculture.

NCCTE.AA21.05.02 - Understand the process for producing, breeding, and marketing agriculture animals.

NCCTE.AA21.06.00 - Understand animal management.

NCCTE.AA21.06.01 - Understand animal husbandry.

NCCTE.AA21.06.02 - Classify animal and financial records.

NCCTE.AA21.07.00 - Understand animal digestion.

NCCTE.AA21.07.01 - Classify animal feeds.

NCCTE.AA21.07.02 - Understand the digestive process.

NCCTE.AA21.08.00 - Understand animal reproduction.

NCCTE.AA21.08.01 - Understand animal reproduction and parturition.

NCCTE.AA21.08.02 - Understand genetics of animal breeding.

Course: Animal Science II

NCCTE.AA22 - Animal Science II

NCCTE.AA22.01.00 - Understand leadership qualities involved in successful employment.

NCCTE.AA22.01.01 - Understand leadership qualities and career building techniques desired by the animal science industry.

NCCTE.AA22.01.02 - Understand parliamentary procedure.

NCCTE.AA22.02.00 - Understand Supervised Agricultural Experience.

NCCTE.AA22.02.01 - Understand SAE components and application to work-based learning.

NCCTE.AA22.02.02 - Understand a financial statement.



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NCCTE.AA22.03.00 - Understand anatomy and physiology of agriculture animals.

NCCTE.AA22.03.01 - Classify anatomy of body systems.

NCCTE.AA22.03.02 - Summarize physiology of body systems.

NCCTE.AA22.04.00 - Understand reproductive and digestive physiology.

NCCTE.AA22.04.01 - Understand reproductive physiology.

NCCTE.AA22.04.02 - Understand digestive physiology.

NCCTE.AA22.05.00 - Understand management of agriculture animals.

NCCTE.AA22.05.01 - Classify animal housing, facilities, and waste management.

NCCTE.AA22.05.02 - Classify preventative maintenance and diseases.

NCCTE.AA22.05.03 - Exemplify reproductive management practices.

NCCTE.AA22.05.04 - Understand biotechnology in livestock production.

NCCTE.AA22.06.00 - Apply rations for livestock animals.

NCCTE.AA22.06.01 - Apply rations to agriculture animals.

NCCTE.AA22.06.02 - Exemplify feed additives and hormone implants.

NCCTE.AA22.07.00 - Evaluate agriculture animals.

NCCTE.AA22.07.01 - Critique agriculture animals.

NCCTE.AA22.07.02 - Interpret genetics.

NCCTE.AA22.07.03 - Apply the use of evaluation records.

NCCTE.AA22.08.00 - Understand the harvesting process for livestock.

NCCTE.AA22.08.01 - Understand food safety regulations.

NCCTE.AA22.08.02 - Understand the livestock and poultry harvesting process.

Course: Animal Science II - Small Animal

NCCTE.AA23 - Animal Science II - Small Animal

NCCTE.AA23.01.00 - Demonstrate leadership qualities through participation in the small animal care instructional program.

NCCTE.AA23.01.01 - Discuss leadership qualities desired by the small animal care industry.

NCCTE.AA23.01.02 - Use public speaking techniques to deliver a speech.

NCCTE.AA23.01.03 - Use Robert's Rules of Order to conduct an orderly transaction of business.

NCCTE.AA23.02.00 - Develop career objectives by implementing a Supervised Agricultural Experience Program.

NCCTE.AA23.02.01 - Explore types of SAE programs.

NCCTE.AA23.02.02 - Use an appropriate SAE record system to substantiate SAE activities.

NCCTE.AA23.03.00 - Discuss the importance of the small animal care industry.

NCCTE.AA23.03.01 - Discuss careers and skills needed for employment in the small animal care industry.

NCCTE.AA23.03.02 - Discuss medical terminology used by those working in the veterinary phase of the small animal industry.

NCCTE.AA23.04.00 - Explore social issues related to working with small animals.



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NCCTE.AA23.04.01 - Summarize animal rights and animal welfare.

NCCTE.AA23.04.02 - Demonstrate safe work habits and techniques used when working with animals.

NCCTE.AA23.05.00 - Discuss the role of major systems of small animals.

NCCTE.AA23.05.01 - Discuss the role of major body systems of small animals.

NCCTE.AA23.05.02 - Discuss the ways that disease processes affect major body systems.

NCCTE.AA23.06.00 - Examine the role of nutrition in the support of animal life.

NCCTE.AA23.06.01 - Discuss the nutritional requirements of small animals including deficiency symptoms and functions.

NCCTE.AA23.06.02 - Distinguish between feeding programs for small animals.

NCCTE.AA23.07.00 - Use information specific to each breed to select the best dog for a given use.

NCCTE.AA23.07.01 - Discuss the major breeds of dogs.

NCCTE.AA23.07.02 - Use care techniques that improve the well-being of dogs.

NCCTE.AA23.08.00 - Use information specific to each breed to select the best cat for a given use.

NCCTE.AA23.08.01 - Discuss the major breeds of cats.

NCCTE.AA23.08.02 - Use care techniques that improve the well-being of cats.

NCCTE.AA23.09.00 - Select the best pocket pet or bird for a given use.

NCCTE.AA23.09.01 - Discuss the major breeds of pocket pets and birds.

NCCTE.AA23.09.02 - Use care techniques that improve the well-being of pocket pets and birds.

NCCTE.AA23.10.00 - Select the best fish, amphibian, and reptile for a given use.

NCCTE.AA23.10.01 - Discuss the major breeds of fish and types of amphibians and reptiles.

NCCTE.AA23.10.02 - Use care techniques that improve the well-being of fish, amphibians, and reptiles.

Course: Equine Science I

NCCTE.2016.AA31 - Equine Science I

NCCTE.2016.AA31.01.00 - Understand leadership in agricultural education.

NCCTE.2016.AA31.01.01 - Investigate organizations related to the equine industry.

NCCTE.2016.AA31.01.02 - Demonstrate parliamentary procedure and public speaking skills.

NCCTE.2016.AA31.01.03 - Understand skills needed for employment and careers in the equine industry.

NCCTE.2016.AA31.02.00 - Understand the use of records in the equine industry.

NCCTE.2016.AA31.02.01 - Understand the Supervised Agricultural Experience component of the equine science class.

NCCTE.2016.AA31.02.02 - Understand methods of financial record keeping in an equine business.

NCCTE.2016.AA31.03.00 - Understand fundamentals of equine.

NCCTE.2016.AA31.03.01 - Understand nomenclature of equine and how equine are important.

NCCTE.2016.AA31.03.02 - Compare the advantages and disadvantages of operating an equine enterprise.



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NCCTE.2016.AA31.04.00 - Understand equine behavior as it relates to safety.

NCCTE.2016.AA31.04.01 - Understand factors that influence equine behavior.

NCCTE.2016.AA31.04.02 - Understand how to promote safe and rewarding horsemanship.

NCCTE.2016.AA31.05.00 - Understand equine anatomy.

NCCTE.2016.AA31.05.01 - Understand major external parts.

NCCTE.2016.AA31.05.02 - Understand the skeletal/muscular system of equine.

NCCTE.2016.AA31.05.03 - Understand the internal organs of equine.

NCCTE.2016.AA31.05.04 - Understand the digestive system of equine.

NCCTE.2016.AA31.06.00 - Apply equine maintenance.

NCCTE.2016.AA31.06.01 - Understand the benefits of a routine maintenance program.

NCCTE.2016.AA31.06.02 - Apply maintenance techniques to equine.

NCCTE.2016.AA31.07.00 - Apply skills for equine selection.

NCCTE.2016.AA31.07.01 - Understand skills necessary to make wise selection of equine.

NCCTE.2016.AA31.07.02 - Apply skills necessary to make wise selection of equine.

NCCTE.2016.AA31.08.00 - Apply tack and equipment skills to equine.

NCCTE.2016.AA31.08.01 - Apply the use of bits for equine.

NCCTE.2016.AA31.08.02 - Apply the use of bridles and halters on equine.

NCCTE.2016.AA31.08.03 - Apply saddles on equine.

NCCTE.2016.AA31.09.00 - Apply equitation techniques. (SUPPLEMENTAL)

NCCTE.2016.AA31.09.01 - Apply English equitation. (SUPPLEMENTAL)

NCCTE.2016.AA31.09.02 - Apply Western equitation. (SUPPLEMENTAL)

Course: Equine Science II

NCCTE.2016.AA32 - Equine Science II

NCCTE.2016.AA32.01.00 - Understand leadership qualities involved in successful employment.

NCCTE.2016.AA32.01.01 - Understand leadership qualities and career building techniques desired by the equine industry.

NCCTE.2016.AA32.01.02 - Understand parliamentary procedure.

NCCTE.2016.AA32.02.00 - Understand the Supervised Agricultural Experience component of the equine science program.

NCCTE.2016.AA32.02.01 - Understand SAE components and application to work-based learning.

NCCTE.2016.AA32.02.02 - Understand a financial statement.

NCCTE.2016.AA32.03.00 - Understand the physiology and functions of equine body systems.

NCCTE.2016.AA32.03.01 - Understand body surfaces, systems, and how they function.

NCCTE.2016.AA32.03.02 - Understand how four functional muscle groups affect equine movement and different gaits of equine.

NCCTE.2016.AA32.04.00 - Apply principles for selecting equine for the herd.

NCCTE.2016.AA32.04.01 - Understand how structure, body dimensions, and other factors influence usefulness, vigor, and longevity of equine.



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NCCTE.2016.AA32.04.02 - Apply principles to determine the age and weight of equine in relation to their usefulness, vigor, and longevity of equine.

NCCTE.2016.AA32.05.00 - Apply principles of nutrition and feed management.

NCCTE.2016.AA32.05.01 - Understand the major nutrient requirements of equine and the factors that affect them.

NCCTE.2016.AA32.05.02 - Understand the classes of feed for equine including forage, concentrates, additives, and supplements needed in the equine ration.

NCCTE.2016.AA32.05.03 - Apply principles to formulate a balanced ration for equine.

NCCTE.2016.AA32.06.00 - Apply principles of facility management

NCCTE.2016.AA32.06.01 - Understand the functions of equine housing and paddocks including fencing needs.

NCCTE.2016.AA32.06.02 - Apply principles of bedding and stall maintenance and waste management.

NCCTE.2016.AA32.07.00 - Apply principles of herd health management.

NCCTE.2016.AA32.07.01 - Apply techniques to test vital life signs and administer first aid in equine management.

NCCTE.2016.AA32.07.02 - Apply principles of dental and hoof care in equine management.

NCCTE.2016.AA32.07.03 - Apply principles of health management in diagnosing and treating internal parasites, external parasites, and diseases.

NCCTE.2016.AA32.08.00 - Understand principles of equine reproduction and genetics.

NCCTE.2016.AA32.08.01 - Understand the principles of equine reproduction management in relation to the mare, stallion, and foal.

NCCTE.2016.AA32.08.02 - Understand basic equine breeding techniques and the advantages of each.

NCCTE.2016.AA32.08.03 - Understand the role of genetics in determining age, coat color, and type of equine and how traits are transferred from one equine to another.

NCCTE.2016.AA32.09.00 - Apply principles of equine handling safety and training.

NCCTE.2016.AA32.09.01 - Apply principles to safely catch, halter, lead, tie, and restrain equine.

NCCTE.2016.AA32.09.02 - Apply principles to train foals, yearlings, and two-year olds.

NCCTE.2016.AA32.10.00 - Apply principles of equitation and showmanship.

NCCTE.2016.AA32.10.01 - Apply principles of bridling and saddling equine.

NCCTE.2016.AA32.10.02 - Apply principles to safely mount and ride equine for the designated gait.

NCCTE.2016.AA32.10.03 - Apply principles in judging halter and performance classes of equine, considering factors such as lameness, blemishes, conformation and other factors.

Course: Veterinary Assisting

NCCTE.AA41 - Veterinary Assisting

NCCTE.AA41.01.00 - Analyze proper usage of veterinary practice management procedures.



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NCCTE.AA41.01.02 - Analyze methods to correctly maintain veterinary medical records.

NCCTE.AA41.02.00 - Apply proper communication skills in a clinical setting.

NCCTE.AA41.02.01 - Implement the proper technique to schedule appointments and manage clients.

NCCTE.AA41.02.02 - Execute effective communication through written, verbal, and technological formats.

NCCTE.AA41.03.00 - Analyze the requirements for ethically and legally handling pharmaceuticals.

NCCTE.AA41.03.01 - Analyze the legal issues involving drugs in the workplace.

NCCTE.AA41.03.02 - Apply knowledge of pharmacy laws to properly fill prescriptions.

NCCTE.AA41.04.00 - Apply proper skills in laboratory procedures.

NCCTE.AA41.04.01 - Implement proper techniques for collection and analysis of laboratory samples .

NCCTE.AA41.04.02 - Execute proper record keeping for laboratory samples.

NCCTE.AA41.05.00 - Evaluate safe handling and safety techniques for patient management.

NCCTE.AA41.05.01 - Evaluate proper restraint techniques for each species.

NCCTE.AA41.05.02 - Evaluate proper safety protocol in a clinical setting.

NCCTE.AA41.06.00 - Analyze general anatomy and disease processes.

NCCTE.AA41.06.01 - Organize knowledge of structures of living organisms.

NCCTE.AA41.06.02 - Differentiate microbes and parasites to identify disease processes.

NCCTE.AA41.07.00 - Apply proper surgical preparation techniques.

NCCTE.AA41.07.01 - Implement techniques to prepare and monitor patients for surgery.

NCCTE.AA41.07.02 - Apply proper surgical instruments and sterilization protocol to prepare surgical packs.

NCCTE.AA41.08.00 - Apply facility maintenance and equipment cleanliness procedures.

NCCTE.AA41.08.01 - Execute Practice hospital maintenance and sanitation protocol of facilities.

NCCTE.AA41.08.02 - Implement aseptic technique to maintain equipment.

NCCTE.AA41.09.00 - Evaluate radiology procedures in the clinical setting.

NCCTE.AA41.09.01 - Critique the importance of safety protocol in the radiological suite.

NCCTE.AA41.09.02 - Apply radiology principles to properly develop and record patient studies.

Course: Natural Resources I

NCCTE.2018.AN51 - Natural Resources I

NCCTE.2018.AN51.01.00 - Understand leadership opportunities in natural resources.

NCCTE.2018.AN51.01.01 - Understand organizations available for students in natural resources.

NCCTE.2018.AN51.01.02 - Understand parliamentary procedure abilities and public speaking skills.

NCCTE.2018.AN51.02.00 - Understand careers in natural resources.

NCCTE.2018.AN51.02.01 - Understand skills needed for employment and careers in the natural resources industry.



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NCCTE.2018.AN51.02.02 - Understand the Supervised Agricultural Experience component of the natural resources class.

NCCTE.2018.AN51.03.00 - Understand information related to natural resources and conservation studies.

NCCTE.2018.AN51.03.01 - Remember the terms related to natural resources and conservation studies.

NCCTE.2018.AN51.03.02 - Understand the role of human population growth, demands, and effect on natural resources.

NCCTE.2018.AN51.04.00 - Understand information related to formation, contents, classification, and use of soil, water, and air.

NCCTE.2018.AN51.04.01 - Understand the contents of soil and demonstrate the ability to properly evaluate and classify soils.

NCCTE.2018.AN51.04.02 - Understand the cause and effects of soil erosion and conservation practices.

NCCTE.2018.AN51.04.03 - Understand the components of the water supply, water users, and water pollution.

NCCTE.2018.AN51.04.04 - Understand the components of the atmosphere, air quality, and air pollution.

NCCTE.2018.AN51.05.00 - Understand fish and wildlife habitats, game management practices, and other factors that affect fish and wildlife species.

NCCTE.2018.AN51.05.01 - Understand the components of freshwater fish habitats and species.

NCCTE.2018.AN51.05.02 - Understand the components of saltwater fish habitats and species.

NCCTE.2018.AN51.05.03 - Understand the habitat requirements and other factors that affect wildlife species.

NCCTE.2018.AN51.05.04 - Understand the qualities and characteristics of NC wildlife species.

NCCTE.2018.AN51.06.00 - Understand the role of forests, trees, and management techniques and their importance in the environment.

NCCTE.2018.AN51.06.01 - Understand the impact of forests, their products, and the parts of a tree and their functions.

NCCTE.2018.AN51.06.02 - Remember common NC trees based on physical characteristics.

NCCTE.2018.AN51.06.03 - Understand tree measurement techniques and skills that are used by professional foresters.

NCCTE.2018.AN51.06.04 - Understand harvest and reproduction techniques used in forestry to improve forest quality.

Course: Natural Resources II

NCCTE.2018.AN52 - Natural Resources II

NCCTE.2018.AN52.01.00 - Understand leadership opportunities in natural resources.

NCCTE.2018.AN52.01.01 - Understand organizations available for students in natural resources



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and the purpose of communication and public speaking techniques.

NCCTE.2018.AN52.01.02 - Understand the procedures used to conduct a business meeting and parliamentary abilities.

NCCTE.2018.AN52.02.00 - Understand financial records and work-based learning opportunities in natural resources.

NCCTE.2018.AN52.02.01 - Understand skills needed for keeping financial records in the natural resources industry.

NCCTE.2018.AN52.02.02 - Understand the Supervised Agricultural Experience component of the natural resources class.

NCCTE.2018.AN52.03.00 - Understand the role of forests, trees, and management techniques and their importance in the environment.

NCCTE.2018.AN52.03.01 - Remember identifying characteristics of NC trees and common forest pests.

NCCTE.2018.AN52.03.02 - Understand management practices used in forestry to improve forest quality.

NCCTE.2018.AN52.03.03 - Demonstrate harvesting skills that reflect management practices as recommended by the NCDFR.

NCCTE.2018.AN52.04.00 - Understand information related to the quality, properties, and use of soil and water.

NCCTE.2018.AN52.04.01 - Understand soil conservation management practices and techniques used to properly sample soils and evaluate test results.

NCCTE.2018.AN52.04.02 - Understand issues related to water pollution, quality, sampling, and identification of indicator species.

NCCTE.2018.AN52.05.00 - Understand identifying characteristics of wildlife, game management practices, and other factors that affect wildlife species.

NCCTE.2018.AN52.05.01 - Understand the role of game management practices and the interaction between animals and society.

NCCTE.2018.AN52.05.02 - Remember wildlife species based on physical characteristics.

NCCTE.2018.AN52.06.00 - Understand the factors involved in planning and establishing an aquaculture facility.

NCCTE.2018.AN52.06.01 - Understand the types of aquaculture facilities and potential products produced in an aquaculture operation.

NCCTE.2018.AN52.06.02 - Understand the operation methods and management considerations used with a variety of aquaculture production systems.

NCCTE.2018.AN52.07.00 - Understand information related to the principles of natural resources recreational opportunities.

NCCTE.2018.AN52.07.01 - Understand the basic procedures involved in camping.

NCCTE.2018.AN52.07.02 - Understand the principles of hunting and firearm safety.



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NCCTE.2018.AN52.07.03 - Understand the basic principles of freshwater fishing.

NCCTE.2018.AN52.08.00 - Understand the terms and concepts related to energy production, usage, and conservation.

NCCTE.2018.AN52.08.01 - Remember terms related to energy.

NCCTE.2018.AN52.08.02 - Understand the major sources of energy, ways to conserve energy, and emerging technologies.

Course: Horticulture I

NCCTE.AP41 - Horticulture I

NCCTE.AP41.01.00 - Examine leadership opportunities related to the horticulture industry.

NCCTE.AP41.01.01 - Discuss the organization available for students in horticulture.

NCCTE.AP41.01.02 - Demonstrate parliamentary procedures and public speaking used in horticulture business meetings.

NCCTE.AP41.02.00 - Examine careers related to horticulture.

NCCTE.AP41.02.01 - Discuss careers and skills necessary for employment in the horticulture industry.

NCCTE.AP41.02.02 - Implement an SAE.

NCCTE.AP41.03.00 - Summarize plant anatomy.

NCCTE.AP41.03.01 - Discuss biological terms used to describe plants.

NCCTE.AP41.03.02 - Discuss the anatomy and functions of plants.

NCCTE.AP41.03.03 - Discuss floriculture and landscape plants.

NCCTE.AP41.04.00 - Examine factors relating to plant growth and development.

NCCTE.AP41.04.01 - Explain the growth process of plants.

NCCTE.AP41.04.02 - Use sexual and asexual methods of propagation.

NCCTE.AP41.05.00 - Explain properties of soils.

NCCTE.AP41.05.01 - Discuss horticultural soils.

NCCTE.AP41.05.02 - Discuss the soil profile and soil sampling for surface and subsurface layers.

NCCTE.AP41.06.00 - Explain the role of nutrients and fertilizers.

NCCTE.AP41.06.01 - Discuss macro and micro nutrients and the role they play in plant deficiencies.

NCCTE.AP41.06.02 - Discuss the advantages and disadvantages of various fertilizers.

NCCTE.AP41.07.00 - Apply procedures to plant a garden.

NCCTE.AP41.07.01 - Plan a garden.

NCCTE.AP41.07.02 - Establish a garden.

NCCTE.AP41.08.00 - Compare distinguishing characteristics of pests.

NCCTE.AP41.08.01 - Discuss the anatomy and life cycle of pests.

NCCTE.AP41.08.02 - Discuss diseases and viruses.

NCCTE.AP41.09.00 - Explain Integrated Pest Management and pesticides.

NCCTE.AP41.09.01 - Discuss integrated pest management strategies.



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NCCTE.AP41.09.02 - Discuss key signal words and safety precautions on pesticide labels.

Course: Horticulture II

NCCTE.AP42 - Horticulture II

NCCTE.AP42.01.00 - Understand leadership qualities.

NCCTE.AP42.01.01 - Understand leadership qualities and career building techniques desired by the horticulture industry.

NCCTE.AP42.01.02 - Understand parliamentary procedure.

NCCTE.AP42.02.00 - Understand SAE.

NCCTE.AP42.02.01 - Understand SAE components and application to work-based learning.

NCCTE.AP42.02.02 - Understand a financial statement.

NCCTE.AP42.03.00 - Understand nursery management.

NCCTE.AP42.03.01 - Understand nursery structures, growing environments, and maintenance.

NCCTE.AP42.03.02 - Understand nursery production and marketing techniques.

NCCTE.AP42.04.00 - Understand greenhouse management.

NCCTE.AP42.04.01 - Remember greenhouse plants.

NCCTE.AP42.04.02 - Understand greenhouse structures, production, and maintenance.

NCCTE.AP42.05.00 - Understand landscape design.

NCCTE.AP42.05.01 - Remember nursery plants.

NCCTE.AP42.05.02 - Understand principles of landscape design techniques and maintenance.

NCCTE.AP42.06.00 - Understand turf.

NCCTE.AP42.06.01 - Remember North Carolina turf grass types.

NCCTE.AP42.06.02 - Understand principles of turf grass planting.

NCCTE.AP42.07.00 - Understand floral design.

NCCTE.AP42.07.01 - Remember floriculture plants.

NCCTE.AP42.07.02 - Understand principles of floral design techniques.

Course: Horticulture II - Turfgrass Management

NCCTE.AP43 - Horticulture II - Turfgrass Management

NCCTE.AP43.01.00 - Examine leadership organizations as related to the turfgrass industry.

NCCTE.AP43.01.01 - Access opportunities for leadership development in turfgrass industry organizations.

NCCTE.AP43.01.02 - Examine the significance and meaning of ceremonies and traditions in agricultural organizations.

NCCTE.AP43.02.00 - Demonstrate the process used in conducting business meetings in turfgrass management organizations.

NCCTE.AP43.02.01 - Explain the role of parliamentary law in the conduction of business.

NCCTE.AP43.02.02 - Demonstrate parliamentary abilities that would be used in a business meeting.



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NCCTE.AP43.03.00 - Apply appropriate techniques in public speaking.

NCCTE.AP43.03.01 - Identify the parts of a speech.

NCCTE.AP43.03.02 - Deliver a speech.

NCCTE.AP43.03.03 - Identify the various components of the techniques involved in agricultural sales.

NCCTE.AP43.03.04 - Demonstrate sales techniques with a 7 minute sales presentation on turfgrass products or services.

NCCTE.AP43.04.00 - Examine the Supervised Agricultural Experience Component of the turfgrass management class.

NCCTE.AP43.04.01 - Identify the component parts of the Supervised Agricultural Experience Record used in the Turfgrass Management class.

NCCTE.AP43.04.02 - Correctly record entries in the SAE record.

NCCTE.AP43.05.00 - Examine financial record-keeping systems used in the turfgrass industry.

NCCTE.AP43.05.01 - Define the terminology used in the financial record-keeping systems, such as asset, liability, inventory, etc.

NCCTE.AP43.05.02 - Correctly record entries in a financial record system.

NCCTE.AP43.06.00 - Examine the principles of plant science as related to Turfgrass Management.

NCCTE.AP43.06.01 - Examine the structure and function of the vegetative and reproductive parts of a plant, including a typical turfgrass plant.

NCCTE.AP43.06.02 - Investigate the major factors such as light, moisture, temperature, and elements affecting plants, including turfgrass.

NCCTE.AP43.07.00 - Examine the principles of pest management as related to Turfgrass Management.

NCCTE.AP43.07.01 - Analyze information found on chemical pesticide labels.

NCCTE.AP43.07.02 - Compare Integrated Pest Management (IPM) and Best Turfgrass Management (BTM)

NCCTE.AP43.08.00 - Explore the relationship of Turfgrass Management on Wildlife management practices.

NCCTE.AP43.08.01 - Identify features of three different kinds of ecosystems.

NCCTE.AP43.08.02 - Compare warm-blooded and cold-blooded animals.

NCCTE.AP43.08.03 - Examine the implementation of a habitat improvement plan.

NCCTE.AP43.09.00 - Explore the relationship of turfgrass management on water management practices.

NCCTE.AP43.09.01 - Describe the four parts of a stream system.

NCCTE.AP43.09.02 - Explain the Best Management Practices (BMP) to avoid polluting groundwater and streams.

NCCTE.AP43.10.00 - Explore the relationship of turfgrass management on waste management practices.



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NCCTE.AP43.10.01 - Explain the carbon cycle.

NCCTE.AP43.10.02 - Explain the processes that occur in a properly constructed compost pile.

NCCTE.AP43.11.00 - Examine the distinguishing characteristics of landscape plants.

NCCTE.AP43.11.01 - Determine landscape plants using vegetative clues, location, and the dichotomous key.

NCCTE.AP43.11.02 - Analyze plant propagation methods including seeds and cuttings.

NCCTE.AP43.12.00 - Compare fertilization and pruning techniques used on landscape plants.

NCCTE.AP43.12.01 - Interpret fertilizer information as described on a fertilizer bag.

NCCTE.AP43.12.02 - Execute proper pruning techniques on selected landscape plants.

NCCTE.AP43.13.00 - Explore career opportunities in the lawn care and turf production industries.

NCCTE.AP43.13.01 - Describe the scope and development of the turfgrass industry.

NCCTE.AP43.13.02 - Describe the career opportunities available in the lawn care industry.

NCCTE.AP43.14.00 - Analyze basic turfgrass growth and development.

NCCTE.AP43.14.01 - Analyze warm and cool season turfgrass in comparison with southern, northern, and transition lawns.

NCCTE.AP43.14.02 - Analyze specific fertilizers used exclusively for golf courses and other sports fields.

NCCTE.AP43.15.00 - Examine basic lawn care practices.

NCCTE.AP43.15.01 - List the steps necessary for establishing or renovating a lawn.

NCCTE.AP43.15.02 - Determine the benefits of mowing, fertilizing, watering, and controlling soil compaction and thatch build-up in lawns.

NCCTE.AP43.16.00 - Examine weed, disease, and insect control as it applies to lawn care and turf production.

NCCTE.AP43.16.01 - Investigate lawn weeds and the proper methods of control.

NCCTE.AP43.16.02 - Investigate lawn diseases and insects and their proper methods of control.

NCCTE.AP43.17.00 - Examine Turf Production

NCCTE.AP43.17.01 - Describe the steps of normal sod production.

NCCTE.AP43.17.02 - Describe the scope, size, and main areas of turfgrass seed production.

NCCTE.AP43.17.03 - Establish an area of turfgrass by using seeds, sod, plugs, and sprigs.

NCCTE.AP43.18.00 - Explore career opportunities in the golf course industry.

NCCTE.AP43.18.01 - Describe the scope and development of the golf course industry.

NCCTE.AP43.18.02 - Compare the career opportunities and skills needed in golf course management.

NCCTE.AP43.19.00 - Examine basic golf course maintenance practices.

NCCTE.AP43.19.01 - Describe the various areas of a golf course, including tees, fairways, putting greens, roughs, bunkers, and hazards.

NCCTE.AP43.19.02 - Determine the practices and benefits of mowing, fertilizing, irrigating, cultivating, and regulating golf courses.



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NCCTE.AP43.19.03 - Cut a cuphole for flag placement.

NCCTE.AP43.20.00 - Examine golf course pests and their control.

NCCTE.AP43.20.01 - Investigate golf course diseases, weeds, and insect pests.

NCCTE.AP43.20.02 - List the advantages of Integrated Pest Management (IPM) in golf course management.

NCCTE.AP43.21.00 - Explore career opportunities and management practices in the sports turf industry.

NCCTE.AP43.21.01 - Compare the career opportunities and skills needed in sports field management.

NCCTE.AP43.21.02 - Explain the various types of sports fields and their features.

NCCTE.AP43.21.03 - Describe the 5 major turfgrasses used for sports fields and their characteristics.

NCCTE.AP43.21.04 - Layout and prepare various sports fields.

NCCTE.AP43.22.00 - Examine basic sports turf irrigation practices.

NCCTE.AP43.22.01 - Determine the layout of a sport turf site and the type of system and equipment needed to properly water it.

NCCTE.AP43.22.02 - Analyze the electrical, plumbing, controller, and valve systems for an irrigation system used for the sports turf industry.

NCCTE.AP43.23.00 - Compare small gasoline and diesel engines used for turf.

NCCTE.AP43.23.01 - Identify the basic components of a small gasoline engine used on turf.

NCCTE.AP43.23.02 - Describe the differences between fuels and lubricants used in turf diesel and gasoline engines.

NCCTE.AP43.23.03 - Perform various maintenance procedures on small engines.

NCCTE.AP43.24.00 - Examine reel type and rotary mowers used on turf.

NCCTE.AP43.24.01 - Service various reel type and rotary mowers and where they are used on the golf course.

NCCTE.AP43.24.02 - Demonstrate the proper use of hand tools used to maintain mowers.

NCCTE.AP43.24.03 - Demonstrate the proper use of a weedeater.

NCCTE.AP43.25.00 - Use a boom sprayer properly.

NCCTE.AP43.25.01 - Identify the basic components of a boom sprayer.

NCCTE.AP43.25.02 - Calibrate a boom sprayer properly.

NCCTE.AP43.25.03 - Calibrate a hand sprayer properly.

NCCTE.AP43.26.00 - Examine the recruiting and people skills needed in the turf industry.

NCCTE.AP43.26.01 - Write a job announcement for an opening on a golf course.

NCCTE.AP43.26.02 - Describe the techniques used to motivate a turf maintenance crew.

NCCTE.AP43.27.00 - Examine the financial and interviewing skills needed in the turf industry.

NCCTE.AP43.27.01 - Identify the major expenses in golf course management.

NCCTE.AP43.27.02 - Write a resume for a turf industry career.



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Course: Horticulture II - Landscaping

NCCTE.AP44 - Horticulture II - Landscaping

NCCTE.AP44.01.00 - Understand leadership and employability skills in the landscape industry.

NCCTE.AP44.01.01 - Understand leadership and worked-based learning skills used in the landscape industry.

NCCTE.AP44.01.02 - Recognize professional organizations and certifications available to those employed in the landscape industry.

NCCTE.AP44.02.00 - Apply procedures to perform calculations and to market landscape enterprises.

NCCTE.AP44.02.01 - Apply procedures to perform calculations used in estimates and quotes.

NCCTE.AP44.02.02 - Understand characteristics of effective marketing.

NCCTE.AP44.03.00 - Understand the processes used to select plants in the landscape industry.

NCCTE.AP44.03.01 - Recognize plants based on use.

NCCTE.AP44.03.02 - Understand factors used to select plants.

NCCTE.AP44.04.00 - Apply procedures to develop plans, estimates, and quotes.

NCCTE.AP44.04.01 - Remember elements and principles of design, irrigation system components and measurements, and symbols used to develop landscape and irrigation plans.

NCCTE.AP44.04.02 - Apply procedures to develop landscape and irrigation plans.

NCCTE.AP44.04.03 - Remember key terms, abilities needed, and items included in estimates and quotes for landscape and/or irrigation plans.

NCCTE.AP44.05.00 - Apply procedures to install landscapes.

NCCTE.AP44.05.01 - Remember the uses for materials and hand tools used to install landscapes.

NCCTE.AP44.05.02 - Apply procedures to use equipment to install landscapes.

NCCTE.AP44.05.03 - Apply procedures to install turfgrass.

NCCTE.AP44.05.04 - Understand procedures used to plant, stake/guy, and mulch landscape plants.

NCCTE.AP44.05.05 - Apply procedures to incorporate hardscapes into landscapes.

NCCTE.AP44.06.00 - Apply procedures to maintain landscapes and landscape equipment.

NCCTE.AP44.06.01 - Apply procedures to prune, fertilize, and mulch landscape plants.

NCCTE.AP44.06.02 - Understand pests and their control in landscapes.

NCCTE.AP44.06.03 - Apply procedures to maintain turfgrass.

NCCTE.AP44.06.04 - Apply procedures to maintain landscape equipment and tools.

Course: Agricultural Mechanics I

NCCTE.2017.AS31 - Agricultural Mechanics I

NCCTE.2017.AS31.01.00 - Apply leadership in agricultural education.

NCCTE.2017.AS31.01.01 - Remember organizations related to the agricultural mechanics industry.

NCCTE.2017.AS31.01.02 - Apply parliamentary procedure and public speaking skills.

NCCTE.2017.AS31.01.03 - Understand skills needed for employment and careers in the



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agricultural mechanics industry.

NCCTE.2017.AS31.02.00 - Understand the use of records in the agricultural mechanics industry.

NCCTE.2017.AS31.02.01 - Understand the Supervised Agricultural Experience component of the agricultural mechanics program.

NCCTE.2017.AS31.02.02 - Understand methods of financial record keeping in an agricultural mechanics business.

NCCTE.2017.AS31.03.00 - Apply shop safety principles to work in an agricultural mechanics shop.

NCCTE.2017.AS31.03.01 - Understand OSHA safety rules, color coding, and personal and fire safety equipment and techniques in an agricultural mechanics shop.

NCCTE.2017.AS31.03.02 - Apply safe work practices when setting up, adjusting, using hand and power tools.

NCCTE.2017.AS31.04.00 - Apply construction principles in agricultural mechanics.

NCCTE.2017.AS31.04.01 - Understand the use of a builder's level, tripod, laser level and the 3-4-5 method to layout a building.

NCCTE.2017.AS31.04.02 - Apply drawings and symbols to develop a project plan and complete a bill of materials.

NCCTE.2017.AS31.04.03 - Understand the use of fasteners, hardware, and finishing materials in carpentry projects.

NCCTE.2017.AS31.04.04 - Understand framing terms to calculate and install floor, wall, and roofing materials.

NCCTE.2017.AS31.04.05 - Apply basics of layout and framing to construct and finish a shop project.

NCCTE.2017.AS31.04.06 - Apply electrical principles to calculate the cost of electricity needed in the agricultural mechanics setting.

NCCTE.2017.AS31.04.07 - Apply principles of electrical wiring to install branch circuits in a safe manner.

NCCTE.2017.AS31.04.08 - Apply principles of painting and preserving to finish wood and metal projects.

NCCTE.2017.AS31.04.09 - Understand principles and materials for constructing fences using various materials.

NCCTE.2017.AS31.05.00 - Apply principles of welding in the agricultural mechanics shop.

NCCTE.2017.AS31.05.01 - Understand principles for using arc welding equipment and materials for SMAW, GMAW and GTAW.

NCCTE.2017.AS31.05.02 - Apply welding skills to construct agricultural mechanics projects.

Course: Agricultural Mechanics II

NCCTE.2018.AS32 - Agricultural Mechanics II

NCCTE.2018.AS32.01.00 - Understand leadership qualities involved in successful employment.

NCCTE.2018.AS32.01.01 - Understand leadership qualities and career building techniques desired



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by the agricultural mechanics industry.

NCCTE.2018.AS32.01.02 - Understand parliamentary procedure.

NCCTE.2018.AS32.02.00 - Understand the Supervised Agricultural Experience component of the agricultural mechanics program.

NCCTE.2018.AS32.02.01 - Understand SAE components and application to work-based learning.

NCCTE.2018.AS32.02.02 - Understand a financial statement.

NCCTE.2018.AS32.03.00 - Apply shop safety skills in the agriculture shop.

NCCTE.2018.AS32.03.01 - Understand OSHA safety rules, color coding, and equipment safety in an agricultural mechanics shop.

NCCTE.2018.AS32.03.02 - Apply safety skills when practicing cold and hot metal skills..

NCCTE.2018.AS32.04.00 - Apply metal fabrication skills in the agricultural shop.

NCCTE.2018.AS32.04.01 - Apply proper procedures for using bolts, nuts, washers, screws, rivets.

NCCTE.2018.AS32.04.02 - Apply the proper use of metal fabrication equipment such as plasma cutters, chop saws, grinders, bandsaws, and CNC (Computer Numerical Control).

NCCTE.2018.AS32.04.03 - Apply proper procedures for using oxy-fuel equipment and materials for annealing, bending, brazing, soldering, tempering, hardening, cutting, and welding various materials.

NCCTE.2018.AS32.04.04 - Apply proper procedures for using arc welding equipment and materials for SMAW, GMAW and GTAW.

NCCTE.2018.AS32.04.05 - Apply metal fabrication skills to design plans, read symbols, and construct a project.

NCCTE.2018.AS32.05.00 - Apply the use of agricultural power in agricultural mechanics.

NCCTE.2018.AS32.05.01 - Understand principles of operation and troubleshooting techniques for air-cooled and water-cooled engines.

NCCTE.2018.AS32.05.02 - Apply preventative maintenance procedures to service small engine powered tools, equipment, tractors and attachments.

NCCTE.2018.AS32.05.03 - Apply principles and procedures for the safe use of tractors and power equipment.

NCCTE.2018.AS32.06.00 - Apply plumbing principles used in agricultural mechanics.

NCCTE.2018.AS32.06.01 - Understand plumbing principles and materials.

NCCTE.2018.AS32.06.02 - Apply proper safety and industry approved techniques to install plumbing materials.

NCCTE.2018.AS32.07.00 - Apply concrete and masonry principles to complete agricultural mechanics projects.

NCCTE.2018.AS32.07.01 - Understand concrete and masonry principles to construct masonry projects in agricultural mechanics.

NCCTE.2018.AS32.07.02 - Apply concrete and masonry principles to calculate materials needed and cost for a masonry project.



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NCCTE.2018.AS32.07.03 - Apply principles to construct a concrete/masonry project.

Course: Agricultural Mechanics II - Small Engines **Updated**

NCCTE.2020.AS33 - Agricultural Mechanics II - Small Engines

NCCTE.2020.AS33.01.00 - Apply Four Cycle Theory

NCCTE.2020.AS33.01.01 - Understand safety and tools used in the small-engines shop.

NCCTE.2020.AS33.01.02 - Understand the internal combustion engine

NCCTE.2020.AS33.01.03 - Apply knowledge of engine operation.

NCCTE.2020.AS33.02.00 - Apply compression theory and operation.

NCCTE.2020.AS33.02.01 - Understand compression components and fundamentals

NCCTE.2020.AS33.02.02 - Apply compression testing components related to valve seatment, rings, and measurement of compression

NCCTE.2020.AS33.03.00 - Apply ignition systems theory and operation.

NCCTE.2020.AS33.03.01 - Understand electrical theory, ignition testing and ignition systems components

NCCTE.2020.AS33.03.02 - Apply ignition testing procedures for servicing a Four Cycle engine

NCCTE.2020.AS33.04.00 - Apply fuel systems theory and operation

NCCTE.2020.AS33.04.01 - Understand fuels and carburetor operating systems.

NCCTE.2020.AS33.04.02 - Apply fuel testing and carburetor building techniques used in servicing a Four Cycle engine.

NCCTE.2020.AS33.05.00 - Apply governor systems theory and operation.

NCCTE.2020.AS33.05.01 - Understand types of governor systems, their function and adjustments.

NCCTE.2020.AS33.05.02 - Apply governor systems adjustments.

Course: Agriscience Applications

NCCTE.AU10 - Agriscience Applications

NCCTE.AU10.01.00 - Understand leadership opportunities and SAE related to the agriscience industry.

NCCTE.AU10.01.01 - Understand the history, opportunities, and structure of organizations related to the agriscience industry.

NCCTE.AU10.01.02 - Understand effective leadership and communication skills.

NCCTE.AU10.01.03 - Understand the importance of SAE to work-based learning.

NCCTE.AU10.02.00 - Understand global agriculture.

NCCTE.AU10.02.01 - Understand the history of global agriculture.

NCCTE.AU10.02.02 - Compare the current and future issues in global agriculture.

NCCTE.AU10.03.00 - Understand the plant industry.

NCCTE.AU10.03.01 - Remember careers in the plant industry.

NCCTE.AU10.03.02 - Understand biotechnology in the plant industry.

NCCTE.AU10.03.03 - Understand basic horticultural (ornamental, fruit, and vegetable) and



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agronomic principles and practices.

NCCTE.AU10.03.04 - Remember tools and their safety practices related to the plant industry.

NCCTE.AU10.04.00 - Understand the animal industry (large animal, equine, and aquaculture).

NCCTE.AU10.04.01 - Remember careers in the animal industry.

NCCTE.AU10.04.02 - Understand biotechnology in the animal industry.

NCCTE.AU10.04.03 - Understand basic animal principles and practices.

NCCTE.AU10.04.04 - Remember tools and their safety practices related to the animal industry.

NCCTE.AU10.05.00 - Understand the environmental science industry (water, soils, wildlife, and forestry).

NCCTE.AU10.05.01 - Remember careers in the environmental science industry.

NCCTE.AU10.05.02 - Understand biotechnology in the environmental science industry.

NCCTE.AU10.05.03 - Understand basic environmental principles and practices.

NCCTE.AU10.05.04 - Remember tools and their safety practices related to the environmental science industry.

NCCTE.AU10.06.00 - Understand the agricultural engineering industry.

NCCTE.AU10.06.01 - Remember careers in the agricultural mechanics industry.

NCCTE.AU10.06.02 - Understand basic agricultural engineering principles and practices.

NCCTE.AU10.06.03 - Remember tools and their safety practices related to the agricultural mechanics industry.

Course: Sustainable Agriculture Production I **New**

NCCTE.2020.AU21 - Sustainable Agriculture Production I

NCCTE.2020.AU21.01.00 - Apply procedures for leadership.

NCCTE.2020.AU21.01.01 - Define the leadership organizations available for students in sustainable agriculture production.

NCCTE.2020.AU21.01.02 - Compare the social, economic, and environmental context out of which sustainable agriculture originated.

NCCTE.2020.AU21.01.03 - Apply parliamentary procedure and public speaking skills.

NCCTE.2020.AU21.02.00 - Apply procedures to gain a career in sustainable agriculture.

NCCTE.2020.AU21.02.01 - Recognize opportunities for careers in the field of sustainable agriculture

NCCTE.2020.AU21.02.02 - Implement a SAE.

NCCTE.2020.AU21.03.00 - Apply soil conservation practices.

NCCTE.2020.AU21.03.01 - Understand basic properties and functions of agricultural soils.

NCCTE.2020.AU21.03.02 - Apply management techniques to improve soil health.

NCCTE.2020.AU21.04.00 - Introduction to Water Conservation

NCCTE.2020.AU21.04.01 - Explain methods of water conservation practices.

NCCTE.2020.AU21.04.02 - Utilize irrigation practices

NCCTE.2020.AU21.05.00 - Apply sustainable crop production practices.



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NCCTE.2020.AU21.05.01 - Compare important horticultural and agronomic crop systems in North Carolina.

NCCTE.2020.AU21.05.02 - Understand tools and techniques needed to cultivate horticultural and agronomic crops.

NCCTE.2020.AU21.05.03 - Apply methods of sustainable crop production.

NCCTE.2020.AU21.06.00 - Apply agroforestry practices.

NCCTE.2020.AU21.06.01 - Define the fundamental concepts of agroforestry.

NCCTE.2020.AU21.06.02 - Apply agroforestry management plans.

NCCTE.2020.AU21.07.00 - Understand animal husbandry in sustainable agriculture.

NCCTE.2020.AU21.07.01 - Explain how animals are selected and bred for sustainable production.

NCCTE.2020.AU21.07.02 - Compare the functions and sources of nutrients for agricultural animals.

NCCTE.2020.AU21.07.03 - Compare animal welfare and humane slaughter practices.

NCCTE.2020.AU21.08.00 - Apply Integrated Pest Management practices.

NCCTE.2020.AU21.08.01 - Identify insect pests, diseases, and weeds that are prominent in agricultural production systems in North Carolina.

NCCTE.2020.AU21.08.02 - Apply appropriate techniques and technologies to manage pests, diseases, and weeds in a sustainable agriculture system.

Course: Sustainable Agriculture Production II **New**

NCCTE.2020.AU22 - Sustainable Agriculture Production II

NCCTE.2020.AU22.01.00 - Understand leadership qualities needed for successful employment in sustainable agriculture.

NCCTE.2020.AU22.01.01 - Understand leadership qualities and career management skills needed in the field of sustainable agriculture.

NCCTE.2020.AU22.01.02 - Apply public speaking skills.

NCCTE.2020.AU22.01.03 - Apply parliamentary procedure skills.

NCCTE.2020.AU22.02.00 - Understand Supervised Agricultural Experience

NCCTE.2020.AU22.02.01 - Understand SAE components and applications to work based learning.

NCCTE.2020.AU22.02.02 - Understand financial statements and recordkeeping.

NCCTE.2020.AU22.02.03 - Implement a SAE.

NCCTE.2020.AU22.03.00 - Understand sustainable communities.

NCCTE.2020.AU22.03.01 - Understand local and regional food systems.

NCCTE.2020.AU22.03.02 - Understand how sustainable agriculture globally contributes to feeding a growing population.

NCCTE.2020.AU22.04.00 - Understand energy issues in sustainable agriculture production.

NCCTE.2020.AU22.04.01 - Understand renewable energy.

NCCTE.2020.AU22.04.02 - Understand energy efficiency and conservation in sustainable agriculture production.



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NCCTE.2020.AU22.04.03 - Apply energy efficiency and conservation in sustainable agriculture production.

NCCTE.2020.AU22.05.00 - Understand emerging technologies in 21st century agricultural production systems.

NCCTE.2020.AU22.05.01 - Understand precision agriculture.

NCCTE.2020.AU22.05.02 - Understand applications of biotechnology.

NCCTE.2020.AU22.05.03 - Understand breeding programs in agricultural production.

NCCTE.2020.AU22.06.00 - Understand food safety in sustainable agriculture production.

NCCTE.2020.AU22.06.01 - Understand Good Agricultural Practices (GAP) to ensure food safety standards for production, post-harvest handling, processing, and distribution.

NCCTE.2020.AU22.06.02 - Apply Good Agricultural Practices (GAP) to agricultural production.

NCCTE.2020.AU22.07.00 - Apply methods of sustainable agriculture to produce an agricultural commodity.

NCCTE.2020.AU22.07.01 - Understand apiculture

NCCTE.2020.AU22.07.02 - Understand aquaponic and hydroponic production.

NCCTE.2020.AU22.07.03 - Understand mushroom production.

NCCTE.2020.AU22.07.04 - Understand vermicomposting.

NCCTE.2020.AU22.07.05 - Apply methods of sustainable agriculture to produce an agricultural commodity.

NCCTE.2020.AU22.08.00 - Understand a marketing and business plan for a sustainable grower.

NCCTE.2020.AU22.08.01 - Understand a marketing plan for a sustainable grower.

NCCTE.2020.AU22.08.02 - Create a business plan for a sustainable grower.

