Agricultural Education

01005 **Exploring Agriculture**
Level: 7-8
Content: An introductory exploration of agriculture. Learning experiences involving agricultural activities such as experimenting, designing, constructing, evaluating and using tools, machines, materials and other processes that provide opportunities for creativity, problem solving, and leadership development.

01006 **Natural/Environmental Resources**
Level: 7-8
Content: To provide an opportunity for students to increase awareness of the close ties among living organisms. This course covers natural and environmental concerns with the interrelationships of living organisms and the world around us.

01011 **Introduction to Agriculture**
Level: 9-12
Credit: ½ or 1
Content: This applied course is designed to introduce students to agriculture, its applications, and leadership development as the core foundation of the Agriculture Education program. Individual units will familiarize the student with: basic mechanical theory and skills – emphasis will be placed on safety and proper use of tools and equipment; principles of evaluation and selection of beef, swine, sheep, horse, and dairy animals; soil and plant relationships that affect the production of food and fiber. Topics may include: soils, irrigation, land judging, plants, crop and weed identification, range management, horticulture, nursery, diseases, insects, and chemicals.

This applied course introduces students to agricultural sciences with emphasis on technical skills, entrepreneurship, and occupational opportunities. Units may also include agricultural construction, food and fiber science, supervised agricultural experiences, and leadership development.

Agricultural mechanics units are designed to develop skills in selection, operation, and maintenance of engines, hydraulics, and agricultural machinery and tractors. Skills in operation and maintenance of equipment, determining a bill of materials, construction techniques, metal fabrication, and joining processes of metals and alloys will be included.

Emphasis is on problem solving and scientific reasoning applied to real world problems integrating knowledge from the life and earth sciences.

01012 **Foundations of Agriculture**
Level: 9-12
Credit: ½ or 1
Content: This applied course is designed to enhance student's perception of agriculture, its applications, and leadership development as the core foundation of the Agriculture Education program. Individual units will familiarize the student with: basic mechanical theory and skills – emphasis will be placed on safety and proper use of tools and equipment; principles of evaluation and selection of beef, swine, sheep, horse, and dairy animals; soil and plant relationships that affect the production of food and fiber. Topics may include: soils, irrigation, land judging, plants, crop and weed identification, range management, horticulture, nursery, diseases, insects, and chemicals.

This applied course introduces students to agricultural sciences with emphasis on technical skills, entrepreneurship, and occupational opportunities. Units may also include agricultural construction, food and fiber science, supervised agricultural experiences, and leadership development.

Agricultural mechanics units are designed to further develop skills in selection, operation, and maintenance of engines, hydraulics, and agricultural machinery and tractors. Skills in operation and maintenance of equipment, determining a bill of materials, construction techniques, metal fabrication, and joining processes of metals and alloys will be included.

Emphasis is on problem solving and scientific reasoning applied to real world problems integrating knowledge from the life and earth sciences. Foundations of Agriculture can be a continuation of Introduction of Agriculture or can be offered in alternating years with Introduction to Agriculture.

01021 **Agriscience Technology I**
01022 **Agriscience Technology II**
01023 **Agriscience Technology III**
01025 **Agriscience Technology IV**
Level: 9-12
Credit: ½ or 1
Content: Agriscience Technology courses integrate biological and technological concepts with principles of agriculture. Courses are designed in sequences to provide experiences in the subject matter. Units are selected to develop knowledge and skills pertaining to nutrition, reproduction, diseases, breeding, genetics, anatomy, and physiology in animals and plants. Genetic engineering, biotechnology, plant propagation techniques, agricultural production technologies, marketing technologies, aquaculture, animal health, and small animal care are examples of units that may be taught.

These courses integrate leadership and supervised agricultural experience programs. Career opportunities and educational preparation are examined. Learning activities are varied with classroom, laboratory and field experiences.

01034 **Agriculture Sales and Service**
Level: 10-12
Credit: ½ or 1
Content: To provide students with skills necessary for entry into employment or furthering education in agriculture sales and service. The course deals with business organizations, business structures, job responsibilities, job applications, and interviewing, human relations, marketing, selling, displaying, using business machines, business accounting, and management skills. Learning activities are varied with classroom, laboratory, and field experiences. Leadership development and supervised agricultural experience programs are an integral part of this course.

01035 **Agricultural Business Management**
Level: 10-12
Credit: ½ or 1
Content: A course designed to introduce the students to agribusiness management in the free enterprise system. It includes a study of economic principles, budgeting, recordkeeping, finance, risk management, business law, marketing, and careers in agribusiness. Leadership development and supervised agricultural experience programs are an integral part of this course.

01043 **Agricultural Mechanics Technology I**
01044 **Agricultural Mechanics Technology II**
01045 **Agricultural Mechanics Technology III**
01046 **Agricultural Mechanics Technology IV**
Level: 9-12
Credit: ½ or 1
Content: Agricultural Mechanics courses are designed to reinforce and extend students' understanding of applied mechanical applications by associating scientific principles and concepts with relevant applications in fields associated with mechanics. Students will be exposed to mechanical, fluid, electrical, and thermal power that are associated with the field of agriculture. Course sequence is designed to provide students with applied activities which may include: metal fusion (welding), structures, surveying, electrical wiring principles, agricultural power and equipment, plumbing, electric motors and controls, CNC, robotics, CADD, Lasers, GIS and GPS systems. Leadership development and supervised agricultural experiences are integral to these courses.

01053 **Botany/Horticultural Science I**
01054 **Botany/Horticultural Science II**
Level: 9-12
Credit: ½ or 1
Content: These courses prepare students to produce greenhouse/nursery plants and to maintain plant growth and propagation structures. Topics to be covered include: soils, plants, plant identification, and plant entomology. Courses examine the importance of plant cell structures, functions of cells, plant processes, nonvascular plants, vascular plants, roots, stems, leaves, flowers, and reproduction of plants. Students may be introduced to the biological, environmental, conservation, and ecological concepts encountered in our environment. Landscape design units will prepare students to design, construct, and maintain planted areas and devices for the beautification of

home grounds and other areas of human habitation and recreation. These courses will reinforce and extend students' understanding of science by associating basic scientific principles and concepts with relevant applications in agriculture. Leadership development and supervised agricultural experience programs are also an integral part of this course.

01063 Natural/Environmental Resources
Level: 9-12
Credit: ½ or 1
Content: This course provides an opportunity for students to increase awareness of the close ties among living organisms. Natural and environmental concerns with the interrelationships of living organisms and the world around us. Leadership development and supervised agricultural experience programs are also an integral part of this course.

01068 Agricultural Processing
Level: 10-12
Credit: ½ or 1
Content: This course is designed to introduce students to the processing of agricultural products. The course will include the processing of food, fiber, and material product processing for the global economy will be emphasized. Personal communication skills, human relation skills, leadership development skills, and supervised agricultural experiences will be emphasized.

01069 World Agricultural Science and Technology
Level: 10-12
Credit: ½ or 1
Content: A course designed to introduce students to global agriculture. This course also includes agricultural career development, leadership, communications, and personal finance.

01073 Agriculture III
Level: 10-12
Credit: ½ or 1
Content: This course develops agricultural skills necessary for employment, entrepreneurship, or further education in agriculture and agricultural occupations. Units may include: crop and livestock production, farm business management, agribusiness, horticulture, natural resources, agricultural mechanics, aquaculture, and water management. Leadership development, and supervised agricultural experiences will also be emphasized.

01074 **Agriculture IV**
Level: 10-12
Credit: ½ or 1
Content: This course develops agricultural skills necessary for employment, entrepreneurship, or further education in agriculture and agricultural occupations. Units may include: crop and livestock production, farm business management, agribusiness, horticulture, natural resources, agricultural mechanics, aquaculture, and water management. Leadership development, and supervised agricultural experiences will also be emphasized. This course can be a continuation of Agriculture III or can be offered in alternating years with Agriculture III.

01990 **Individual Agricultural Studies**
Level: 9-12
Credit: ½ or 1
Content: This course provides students in agriculture an opportunity to expand and explore the fields of agriculture, leadership, and personal development on an individual basis.

01993 **Community Development**
Level: 9-12
Credit: ¼, ½ or 1
Content: This course provides students in agriculture an opportunity to understand the principles and fundamentals of the community development process, select, plan, and implement a community development project or projects, and to acquire knowledge and skills in community leadership for present and future uses.

01995 **Supervised Agricultural Experience Program**
Level: 9-12
Credit: ¼, ½ or 1
Content: This course provides credit for student agricultural experience exploration. Fulfillment of the standards outlined in the Policy Statement for Supervised Agricultural Experience Programs in agricultural education in North Dakota. All students are required to complete a minimum program of supervised agricultural experience; those who wish to exceed the minimum may earn ¼, ½, or 1 credit each year.

01999 **Cooperative Work Experience**
Level: 11-12, and a minimum student age of 16 years
Credit: maximum of ½ per semester, not to exceed 2 credits while in high school
Content: This course provides students with a regularly scheduled, supervised employment opportunity related to agriculture occupations in order to develop and improve work skills. The employment must be preceded by, or concurrent with, classroom instruction related to the work experience, consistent with the students' occupational goals, and related to the Agriculture Education program area. There shall be a training agreement among all partners to the work experience (school, employer, student, and parents/guardians) outlining the expectations of each party. The instructor shall also develop a specific training plan with the employer for each student placed. The training plan shall include provisions for assessment of student progress and for on-site visits by the instructor during the student's placement. Students may be paid a wage by the employer.