

HIGH SCHOOL AGRICULTURAL EDUCATION COURSE CODES GRADES 7-12

High school (grades 9-12) courses in Agricultural Education require 150 contact hours per credit.

Course Code	Course Name	Grade Levels	Description	Accreditation Standard/ Credit Options*	License/credential Required**
01005	Exploring Agriculture	7-8	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.	NDAC 67-19-01-34 (2)(b) ◆ may be counted as part of the minimum 200 minutes per week of additional courses	License Code: 01005-Agriculture Education ◆ 7-12 or 9-12
01006	Natural/ Environmental Resources	7-8	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.	NDAC 67-19-01-34 (2)(b) ◆ may be counted as part of the minimum 200 minutes per week of additional courses	
01011	Introduction to Agriculture	9-12	<p>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.</p> <p>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.</p> <p>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.</p> <p>Emphasis is on problem solving and scientific reasoning applied to real world problems integrating knowledge from the life and earth sciences.</p>	½ or 1	License Code: 01005-Agriculture Education ◆ 7-12 or 9-12

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01012	Foundations of Agriculture	9-12	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	½ or 1	License Code: 01005-Agriculture Education ♦ 7-12 or 9-12

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Course Code	Course Name	Grade Levels	Description	Accreditation Time/ Credit Options*	License/credential Required**
01021	Agriscience Technology I	9-12	<p>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.</p> <p>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.</p> <p>Note: <i>These courses can be taught for Agricultural Education credit only.</i></p>	½ or 1	License Code: 01005-Agriculture Education ♦ 7-12 or 9-12
01022	Agriscience Technology II	9-12	<p>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.</p> <p>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.</p> <p>Note: <i>These courses can be taught for Agricultural Education credit only.</i></p>	½ or 1	

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01023	Agriscience Technology III	9-12	<p>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.</p> <p>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.</p> <p>Note: <i>These courses can be taught for Agricultural Education credit only.</i></p>	½ or 1	License Code: 01005-Agriculture Education ♦ 7-12 or 9-12
01025	Agriscience Technology IV	9-12	<p>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.</p> <p>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.</p> <p>Note: <i>These courses can be taught for Agricultural Education credit only.</i></p>	½ or 1	

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Course Code	Course Name	Grade Levels	Description	Accreditation Time/ Credit Options*	License/credential Required**
01034	Agriculture Sales and Service	10-12	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.	½ or 1	License Code: 01005-Agriculture Education ♦ 7-12 or 9-12
01035	Agricultural Business Management	10-12	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.	½ or 1	
01043	Agricultural Mechanics Technology I	9-12	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.	½ or 1	

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Course Code	Course Name	Grade Levels	Description	Accreditation Time/ Credit Options*	License/credential Required**
01044	Agricultural Mechanics Technology II	9-12	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.	½ or 1	License Code: 01005-Agriculture Education ◆ 7-12 or 9-12
01045	Agricultural Mechanics Technology III	9-12	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.	½ or 1	

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01046	Agricultural Welding and Fabrication	10-12	This course provides students in agriculture an opportunity to reinforce and extend understanding of applied mechanical applications. Students will be exposed to mechanical, electrical and thermal power that are associated with the field of agricultural welding. Applied activities develop an understanding and skill development in metal joining and fabrication processes. Instruction will prepare students to select, operate, repair, fabricate and maintain a variety of agricultural machinery and equipment. Processes covered may include: Oxyfuel Cutting/Heating/Welding, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux-cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW), Air-carbon Arc Cutting, Plasma Arc Cutting, Safety and Metal Fabrication. In addition, record keeping, communication skills, employability and human relation skills will be covered. Leadership development and Supervised Agricultural Experiences (SAE's) are also integral to this course.	½ or 1	
01047	Advanced Ag Welding and Fabrication	10-12	This course can be a continuation of 01046 Agricultural Welding and Fabrication or can be offered in alternating years. This course provides students in agriculture an additional opportunity to reinforce and extend understanding of applied mechanical applications. Advance applications will further develop knowledge and skill development in metal joining and fabrication processes. Instruction will prepare students to select, operate, repair, fabricate and maintain a variety of agricultural machinery and equipment. Processes covered may include: Oxyfuel Cutting/Heating/Welding, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux-cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW), Air-carbon Arc Cutting, Plasma Arc Cutting, Safety and Metal Fabrication projects. In addition, record keeping, communication skills, employability and human relation skills will be covered. Leadership development and Supervised Agricultural Experiences (SAE's) are also integral to this course.	½ or 1	License Code: 01005-Agriculture Education ◆ 7-12 or 9-12

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01053	Botany/Horticultural Science I	9-12	<p>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.</p> <p>Note: <i>These courses can be taught for Agricultural Education credit only.</i></p>	½ or 1	License Code: 01005-Agriculture Education ♦ 7-12 or 9-12
01054	Botany/Horticultural Science II	9-12	<p>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.</p> <p>Note: <i>These courses can be taught for Agricultural Education credit only.</i></p>	½ or 1	

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01063	Natural/ Environmental Resources	9-12	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.	½ or 1	License Code: 01005-Agriculture Education ♦ 7-12 or 9-12
01068	Agricultural Processing	10-12	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.	½ or 1	
01069	World Agricultural Science and Technology	10-12	A course designed to introduce students to global agriculture. This course also includes agricultural career development, leadership, communications, and personal finance. Note: <i>This course can be taught for Agricultural Education credit only.</i>	½ or 1	
01073	Agriculture III	10-12	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.	½ or 1	
01074	Agriculture IV	10-12	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.	½ or 1	
01990	Individual Agricultural Studies	9-12	This course provides students in agriculture an opportunity to expand and explore the fields of agriculture, leadership, and personal development on an individual basis.	½ or 1	

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01993	Community Development	9-12	This course provides students in agriculture an opportunity to understand the principles and fundamentals of the community development and gain an appreciation of essential community needs. Students will have the opportunity to study the community development process and select, plan, and implement a community development project or projects. Community leadership development and service learning are integral to the success of this course.	¼, ½, or 1	License Code: 01005-Agriculture Education ♦ 7-12 or 9-12
01995	Supervised Agricultural Experience Program	9-12	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.	¼, ½, or 1	
01999	Cooperative Work Experience	11-12	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. NOTE: <i>Students must be at least 16 years old and may be paid a wage by the employer.</i>	Maximum: ½ per semester, not to exceed 2 credits while in high school	

* High school curricular requirements are spelled out in NDCC 15.1-21-02. Accreditation Rules can be found at <http://www.legis.nd.gov/information/acdata/pdf/67-19-01.pdf>. For accreditation, schools must provide additional units of credit based on school enrollment [see NDAC 67-19-01-32 (3)].

** Please refer to the second page of the teacher's North Dakota Educator's Professional license to verify which subject areas a teacher is qualified to teach. Licenses and endorsements are obtained on a teaching license from the Education Standards and Practices Board (ESPB). Credentials are obtained from the Department of Public Instruction (DPI) and are issued to individuals holding a current teaching license.