

Agricultural Sciences

Department Information

- **Department Web Site:**
www.ag.ndsu.edu/academics/ (<http://www.ag.ndsu.edu/academics/>)
- **Credential Offered:**
B.S.
- **Sample Program Guide:**
catalog.ndsu.edu/programs-study/undergraduate/agricultural-sciences/ (<http://catalog.ndsu.edu/programs-study/undergraduate/agricultural-sciences/>)

Major Requirements

Major: Agricultural Sciences

Degree Type: B.S.

Minimum Degree Credits to Graduate: 120

University Degree Requirements

1. Satisfactory completion of all requirements of the curriculum in which one is enrolled.
2. Earn a minimum total of 120 credits in approved coursework. Some academic programs exceed this minimum.
3. Satisfactory completion of the general education requirements as specified by the university.
4. A minimum institutional GPA of 2.00 based on work taken at NDSU.
5. At least 30 credits must be NDSU resident credits. Resident credits include credits registered and paid for at NDSU.
6. At least 36 credits presented for graduation must be in courses numbered 300 or higher.
7. Students presenting transfer credit must meet the NDSU residence credits and the minimum upper level credit. Of the 30 credits earned in residence, a minimum of 15 semester credits must be in courses numbered 300 or above, and 15 semester credits must be in the student's curricula for their declared major.

For complete information, please refer to the Degree and Graduation Requirements (<http://catalog.ndsu.edu/academic-policies/undergraduate-policies/degree-and-graduation/>) section of this Bulletin.

University General Education Requirements

A list of university approved general education courses and administrative policies are available here (<http://catalog.ndsu.edu/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

Code	Title	Credits
Category C: Communication		12
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing [†]		
Category R: Quantitative Reasoning [†]		3
Category S: Science and Technology [†]		10
Category A: Humanities and Fine Arts [†]		6
Category B: Social and Behavioral Sciences [†]		6
Category W: Wellness [†]		2
Category D: Cultural Diversity ^{*†}		
Category G: Global Perspectives ^{*†}		
Total Credits		39

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Courses for category D & G are satisfied by completing D & G designated courses in another general education category.

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General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review major requirements to determine if specific courses can also satisfy these general education categories.

Major Requirements

Code	Title	Credits
Major Requirements for Agriculture Sciences		
AGRI 189		1
AGRI 120	Feeding and Fueling the World	3
ANSC 114	Introduction to Animal Sciences	3
ASM 115	Fundamentals of Agricultural Systems Management	3
BIOL 111	Concepts of Biology	3
or BIOL 150	General Biology I	
CSCI 114	Computer Applications	3
or TL 116	Business Software Applications	
CHEM 117	Chemical Concepts and Applications	3
or CHEM 121	General Chemistry I	
ECON 201	Principles of Microeconomics	3
H&CE 496	Field Experience	4
NRM 225	Natural Resources & Agrosystems	3
PLSC 110	World Food Crops	3
SOIL 210	Introduction to Soil Science	3
STAT 330	Introductory Statistics	3

Three Agriculture Sciences Emphasis Areas

Student must select three (3) emphasis areas from the 10 areas offered below to complete the major. Each emphasis area is 12 credits and a minimum of 36 credits is required for the three areas. A minimum of six (6) credits in each emphasis area must be completed with courses numbered at the 300-400 level.

Total Credits **74**

Code	Title	Credits
Agricultural Business and Economics Emphasis Area		
ECON 202	Principles of Macroeconomics	3
AGEC 242	Introduction to Agricultural Management	3
Select 6 credits from the following:		6
AGEC 244	Agricultural Marketing	
AGEC 246	Introduction to Agricultural Finance	
AGEC 342	Farm and Agribusiness Management II	
AGEC 343	Introduction to Commodity Trading	
AGEC 347	Principles of Real Estate	
AGEC 350	Agrisales	
AGEC 356	Advanced Agricultural Lending	
AGEC 474	Cooperatives	
ECON 343	Intermediate Macroeconomics	
ECON 402	Economics of Entrepreneurship	

Total Credits **12**

Code	Title	Credits
Agricultural Systems Management Emphasis Area		
Select 12 credits from the following courses:		12
ASM 323	Post-Harvest Technology	
ASM 354	Electricity and Electronic Applications	
ASM 373	Tractors & Power Units	
ASM 374	Power Units Laboratory	

ASM 378	Machinery Principles and Management	
ASM 429	Hydraulic Power Principles and Applications	
ASM 475	Management of Agricultural Systems	

Total Credits **12**

Code	Title	Credits
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Animal Health Emphasis Area

ANSC 218	Anatomy and Physiology of Domestic Animals	3
ANSC 219	Anatomy and Physiology Laboratory	1
ANSC 223	Introduction to Animal Nutrition	2

Select 6 credits from the following: 6

ANSC 260	Introduction to Equine Studies	
ANSC 300	Domestic Animal Behavior and Management	
ANSC 323	Fundamentals of Nutrition	
ANSC 324	Applied Animal Nutrition	
ANSC 357	Animal Genetics	
ANSC 370	Fundamentals/Animal Disease	
ANSC 371	Fundamentals of Animal Disease II	

Total Credits **12**

Code	Title	Credits
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Animal Production Emphasis Area

ANSC 220	Livestock Production	3
ANSC 223	Introduction to Animal Nutrition	2

Select 7 credits from the following: 7

ANSC 230	Meat Grading and Evaluation	
ANSC 231	Livestock Evaluation	
ANSC 232	Dairy Cattle Evaluation	
ANSC 240	Meat Animal Evaluation and Marketing	
ANSC 241	Survey of Meat Science	
ANSC 300	Domestic Animal Behavior and Management	
ANSC 323	Fundamentals of Nutrition	
ANSC 324	Applied Animal Nutrition	
ANSC 340	Principles of Meat Science	
ANSC 344	Fundamentals of Meat Processing	
ANSC 380	Livestock Sales and Marketing	
ANSC 440		
ANSC 463	Physiology of Reproduction	
ANSC 487	Growing and Finishing Cattle Management	
PLSC 315	Genetics	

Total Credits **12**

Code	Title	Credits
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Crop Production Emphasis Area

PAG 115	Introduction to Precision Agriculture	2
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Select 10 credits from the following: 10

PLSC 180	Plant Systems Approach to Global Foods	
PLSC 210	Horticulture Science	
PLSC 225	Principles of Crop Production	
PLSC 320	Integrated Forage and Cover Crops Production Management and Ecosystem Services	
PLSC 335	Seed Technology & Production	
PLSC 340	Grain Grading	
PLSC 368	Plant Propagation	

PLSC 386	Arboriculture Climbing and Rigging Operations	
PLSC 415	Vegetable Crop Production	
PLSC 422	Greenhouse Production and Management	
PLSC 425	Potato Science	
PLSC 485	Arboriculture Science	
PAG 215	Mapping of Precision Ag Data	
SOIL 322	Soil Fertility and Fertilizers	
SOIL 465	Soil And Plant Analysis	
Total Credits		12

Code	Title	Credits
Crop Protection Emphasis Area		
PPTH 324	Introductory Plant Pathology	3
ENT 350	General Entomology	3
Select 6 credits from the following:		6
PLSC 215	Weed Identification	
PLSC 323	Principles of Weed Science	
PLSC 453	Advanced Weed Science	
PPTH 454	Diseases Of Field and Forage Crops	
PPTH 455	Plant Disease Management	
Total Credits		12

Code	Title	Credits
Extension Education Emphasis Area		
H&CE 445	Designing and Delivering Nonformal Education Programs	3
H&CE 446	Extension Education	3
Select 6 credits from the following:		6
EDUC 322	Educational Psychology	
HDFS 462	Methods of Family Life Education	
H&CE 468	Foundations of Family and Consumer Sciences Education	
H&CE 480	Science, Technology, Engineering & Mathematics Teaching Methods in Agricultural Education	
ENGL 459	Researching and Writing Grants and Proposal	
Total Credits		12

Code	Title	Credits
Landscape Production Emphasis Area		
PLSC 210	Horticulture Science	3
PLSC 368	Plant Propagation	3
Select 6 credits from the following:		6
PLSC 341	Landscape Bidding, Contracting and Operations	
PLSC 355	Woody Landscape Plants	
PLSC 365	Herbaceous Landscape Plants	
PLSC 370	Landscape Management	
PLSC 375	Turfgrass Management	
PLSC 381	Sports Turf Operations	
PLSC 386	Arboriculture Climbing and Rigging Operations	
PLSC 412	Nursery Production and Management	
PLSC 422	Greenhouse Production and Management	
PLSC 457	Horticulture and Turfgrass Systems	
PLSC 465	Advanced Landscape Plants	
PLSC 468	Landscape Irrigation Design	
PLSC 469	Landscape Irrigation Installation and Management	

PLSC 485	Arboriculture Science	
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Total Credits **12**

Code	Title	Credits
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Natural Resources Emphasis Area

SOIL 217	Introduction to Meteorology & Climatology	3
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Select 9 credits from the following: 9

NRM 264	Natural Resource Management Systems	
NRM 401	Urban-Ecosystem Management	
NRM 402	River and Stream Resource Management	
NRM 420	Sustainable Scenarios in Natural Resources Management	
NRM 421	Environmental Outreach Methods	
NRM 431	National Environmental Policy Act and Environmental Impact Assessment	
NRM 453	Rangeland Resources Watershed Management	
NRM 454	Wetland Resources Management	
NRM 456	Ecological Restoration	
SOIL 264	Natural Resource Management Systems	
SOIL 410	Soils and Land Use	

Total Credits **12**

Code	Title	Credits
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Plant Food Production and Safety Emphasis Area

MICR 100	Famine, Plague, and Cheese. Microbes: the cause and solution to the world's problems	3
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MICR 453	Food Microbiology	2
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Select 7 credits from the following: 7

ASM 323	Post-Harvest Technology	
CFS 370	Food Processing I	
CFS 450	Cereal Technology	
CFS 452	Food Laws and Regulations	
CFS 460	Food Chemistry	
CFS 462	Food Ingredient Technology	
CFS 472	Cereal and Food Fermentation	
CFS 473	Food Safety	
MICR 453L	Food Microbiology Laboratory	

Total Credits **12**

Degree and Major Notes

- Courses cannot be used to fulfill more than one emphasis
- Classes offered in the emphasis may require additional prerequisites; consult an advisor to plan accordingly.
- Classes offered in the emphasis areas and electives may be offered on-campus only or available via distance education. See the semester schedule for a listing of online classes.