

Precision Agriculture Technology & Management

Department Information

- **Department Web Site:**
www.ndsu.edu/aben/ (<http://www.ndsu.edu/aben/>)
- **Credential Offered:**
B.S.
- **Program Overview:**
catalog.ndsu.edu/programs-study/undergraduate/precision-agriculture/ (<http://catalog.ndsu.edu/programs-study/undergraduate/precision-agriculture/>)

Major Requirements

Major: Precision Agriculture Technology & Management

Degree Type: Bachelor of Science (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/past-bulletin-archive/2023-24/academic-policies/undergraduate-policies/degree-and-graduation/>) section of this Bulletin.

University General Education Requirements

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

*

May be satisfied by completing courses in another General Education category.

†

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.

- A list of university approved general education courses and administrative policies are available here (<http://catalog.ndsu.edu/past-bulletin-archive/2023-24/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).

Precision Agriculture Technology & Management Major

| Code | Title | Credits |
|--|--|--------------|
| Core Requirements | | |
| AGEC 242 | Introduction to Agricultural Management | 3 |
| ASM 225 | Computer Applications in Agricultural Systems Management | 3 |
| ASM 354 | Electricity and Electronic Applications | 3 |
| ASM 348 | Agricultural Technology Exposition | 1 |
| or PAG 348 | Agricultural Technology Exposition | |
| ASM 378 | Machinery Principles and Management | 3 |
| ASM 475 | Management of Agricultural Systems (Capstone) | 2 |
| or PAG 475 | Precision Ag Systems Capstone | |
| CSCI 114 | Computer Applications | 3 |
| or TL 116 | Business Software Applications | |
| CHEM 121 | General Chemistry I | 3 |
| MATH 103 | College Algebra | 3 |
| PAG 115 | Introduction to Precision Agriculture | 2 |
| PHYS 120 | Fundamentals of Physics | 3 |
| PHYS 120L | Fundamentals of Physics Laboratory | 1 |
| or CHEM 121L | General Chemistry I Laboratory | |
| STAT 330 | Introductory Statistics | 3 |
| Option Requirement | | |
| Select one option to complete this major: Precision Agriculture or Agricultural Technology | | 51 or 56 |
| Total Credits | | 84-89 |

Precision agriculture option

| Code | Title | Credits |
|---|--|-----------|
| Precision Ag Option ¹ | | |
| PAG 115L | Introduction to Precision Agriculture Lab | 1 |
| PAG 215 | Mapping of Precision Ag Data | 3 |
| PAG 315 | Electronic Systems in Precision Ag | 3 |
| PAG 454 | Applications of Precision Agriculture | 3 |
| PAG 496 | Field Experience/Practicum (Internship) | 1 |
| GEOG 455 | Introduction to Geographic Information Systems | 4 |
| PLSC 110 | World Food Crops | 3 |
| or ANSC 114 | Introduction to Animal Sciences | |
| PPTH 324 | Introductory Plant Pathology | 3 |
| or ANSC 218 | Anatomy and Physiology of Domestic Animals | |
| PLSC 225 | Principles of Crop Production | 3 |
| or ANSC 220 | Livestock Production | |
| SOIL 210 | Introduction to Soil Science | 3 |
| or ANSC 223 | Introduction to Animal Nutrition | |
| SOIL 322 | Soil Fertility and Fertilizers | 3 |
| or ANSC 240 | Meat Animal Evaluation and Marketing | |
| Option Electives | | |
| Select 21 credits from the Program Option Electives list below. | | 21 |
| Total Credits | | 51 |

Agricultural Technology Option

| Code | Title | Credits |
|---|---|-----------|
| Agricultural Technology Option ¹ | | |
| ASM 115 | Fundamentals of Agricultural Systems Management | 3 |
| ASM 125 | Fabrication & Construction Technology | 3 |
| ASM 264 | Natural Resource Management Systems | 3 |
| ASM 264L | Natural Resource Management Systems Laboratory | 1 |
| ASM 323 | Post-Harvest Technology | 3 |
| ASM 373 | Tractors & Power Units | 3 |
| ASM 374 | Power Units Laboratory | 1 |
| ASM 429 | Hydraulic Power Principles and Applications | 3 |
| ACCT 102 | Fundamentals of Accounting | 3 |
| ECON 201 | Principles of Microeconomics | 3 |
| ECON 202 | Principles of Macroeconomics | 3 |
| Option Electives | | |
| Select 27 credits from the Program Option Electives list below. | | 27 |
| Total Credits | | 56 |

Program OPTION ELECTIVES

| Code | Title | Credits |
|--|---|---------|
| Please select the appropriate number of elective credits for your option from the list below. ² | | |
| ACCT 201 | Elements of Accounting II | 3 |
| AGEC 244 | Agricultural Marketing | 3 |
| AGEC 246 | Introduction to Agricultural Finance | 3 |
| ANSC 114 | Introduction to Animal Sciences | 3 |
| ANSC 218 | Anatomy and Physiology of Domestic Animals | 3 |
| ANSC 220 | Livestock Production | 3 |
| ANSC 222 | Meat Animal Evaluation | 3 |
| ANSC 240 | Meat Animal Evaluation and Marketing | 3 |
| ANSC 320 | Dairy Cattle Selection | 3 |
| ANSC 323 | Fundamentals of Nutrition | 3 |
| ANSC 330 | Competitive Meat Grading and Evaluation | 2 |
| ANSC 331 | Competitive Livestock Evaluation | 2 |
| ANSC 357 | Animal Genetics | 3 |
| ANSC 463 | Physiology of Reproduction | 3 |
| ANSC 470 | Applied Nutrition | 4 |
| ASM 115 | Fundamentals of Agricultural Systems Management | 3 |
| ASM 125 | Fabrication & Construction Technology | 3 |
| ASM 234 | 3D Printing and Manufacturing | 2 |
| ASM 264 | Natural Resource Management Systems | 3 |
| ASM 264L | Natural Resource Management Systems Laboratory | 1 |
| ASM 373 | Tractors & Power Units | 3 |
| ASM 374 | Power Units Laboratory | 1 |
| ASM 429 | Hydraulic Power Principles and Applications | 3 |
| BIOL 150 | General Biology I | 3 |
| BIOL 150L | General Biology I Laboratory | 1 |
| BUSN 340 | International Business | 3 |
| BUSN 487 | Managerial Economics | 3 |
| COMM 212 | Interpersonal Communication | 3 |
| COMM 216 | Intercultural Communication | 3 |
| COMM 308 | Business and Professional Speaking | 3 |
| CSCI 479 | Introduction to Data Mining | 3 |

| | | |
|-----------|--|-----|
| ECON 105 | Elements of Economics | 3 |
| ECON 341 | Intermediate Microeconomics | 3 |
| ECON 343 | Intermediate Macroeconomics | 3 |
| ENT 210 | Insects, Humans and the Environment | 3 |
| ENT 350 | General Entomology | 3 |
| ENT 360 | Economic Entomology | 1-3 |
| ENT 410 | Intergrated Management of Pests | 3 |
| ENT 470 | Insect Ecology | 3 |
| FIN 320 | Principles of Finance | 3 |
| GEOG 105 | Fundamentals of Geographic Information Systems | 3 |
| GEOG 455 | Introduction to Geographic Information Systems | 4 |
| GEOG 456 | Advanced Geographic Information Systems | 3 |
| GEOG 470 | Remote Sensing | 3 |
| GEOG 480 | Geographic Information Systems Pattern Analysis and Modeling | 3 |
| IME 335 | Welding Technology | 3 |
| MGMT 320 | Foundations of Management | 3 |
| MRKT 320 | Foundations of Marketing | 3 |
| ME 311 | Introduction To Aviation | 3 |
| ME 312 | Introduction to Flight | 2 |
| ME 313 | Commercial Instrument Ground School | 3 |
| NRM 452 | Managing Natural and Rangeland Resources using GIS | 3 |
| PLSC 110 | World Food Crops | 3 |
| PLSC 215 | Weed Identification | 1 |
| PLSC 225 | Principles of Crop Production | 3 |
| PLSC 315 | Genetics | 3 |
| PLSC 315L | Genetics Laboratory | 1 |
| PLSC 320 | Principles of Forage Production | 3 |
| PLSC 323 | Principles of Weed Science | 3 |
| PAG 115L | Introduction to Precision Agriculture Lab | 1 |
| PAG 215 | Mapping of Precision Ag Data | 3 |
| PAG 315 | Electronic Systems in Precision Ag | 3 |
| PAG 454 | Applications of Precision Agriculture | 3 |
| PPTH 324 | Introductory Plant Pathology | 3 |
| PPTH 454 | Diseases Of Field and Forage Crops | 3 |
| SOIL 210 | Introduction to Soil Science | 3 |
| SOIL 217 | Introduction to Meteorology & Climatology | 3 |
| SOIL 322 | Soil Fertility and Fertilizers | 3 |
| SOIL 351 | Soil Ecology | 3 |
| SOIL 410 | Soils and Land Use | 3 |
| SOIL 433 | Soil Ecohydrology and Physics | 3 |
| SOIL 444 | Soil Genesis and Survey | 3 |
| SOIL 447 | Microclimatology | 3 |
| SOIL 465 | Soil And Plant Analysis | 3 |
| SOIL 480 | Soils and Pollution | 3 |

1

Courses required in either option may be used as electives in the other option.

2

In consultation with your advisor, courses not appearing on the list that are intended to be used in this area require a substitution form to be submitted to the Office of Registration and Records by the student's advisor during the term in which the student completes the course.