

Agricultural Systems Management

Agricultural Systems Management

The Agricultural Systems Management (ASM) program combines an understanding of the agricultural, biological, and physical sciences with economics, managerial, and technical skills. This understanding of science, systems management, and applications engineering can be applied to a career in the production and processing of food, feed, fiber, and fuel, and the marketing, sales, and distribution of agricultural products and services. Students focus on the application of engineering designs, the study of technology used in agriculture, and the integration of business management concepts in the agricultural, food, and closely related industries. Students complete courses in machinery principles, off-road power systems, precision agriculture, commodity handling and processing, natural resources management, electrical and electronic systems, and information and decision support technology.

Taking courses in accounting, economics, marketing, management, business law, sales, and finance develops a strong business background. Personal career objectives may be pursued through specialization in areas such as agribusiness and production agriculture. Students are encouraged to minor in agribusiness, business administration, communication, or another agricultural discipline.

Agricultural Systems Management graduates are often self-employed as owners/operators of commercial farms, ranches, and businesses. Others are employed in positions that provide the link between the consumer and people in fields such as research design, engineering, or manufacturing. They are often also employed as crop consultants or production specialists. Employers include:

1. companies and agencies that provide inputs, products, and services for agricultural production;
2. companies or agencies in the business of handling, storing, processing, and distributing agricultural products/commodities and processed food or non-food products; and
3. companies and agencies that supply physical and business services to rural and urban communities.

This degree is ideal for those interested in careers in technical sales or management of an agriculture-related business involved in production, processing, or manufacturing. The flexibility of the program allows students the opportunity to tailor the curriculum to complement their career goals.

Students interested in the design, testing, manufacturing, and development aspects of products, processes, or systems for agricultural production, food, and value-added processing of commodities, or sustainable management of environmental resources should consider the Agricultural and Biosystems Engineering (<http://bulletin.ndsu.edu/past-bulletin-archive/2017-18/undergraduate/colleges/agriculture-food-systems-natural-resources/agriculture-biosystems-engineering/agriculture-biosystems-engineering>) curriculum.

Curriculum Options

- **Production Agriculture:** Students select courses in agricultural sciences and supporting areas to achieve career goals in the technical and management aspects of production agriculture systems.
- **Applied Business:** Students select courses in agribusiness, business, and related areas to achieve career goals in agricultural and related areas to achieve career goals in agricultural and related business areas.
- **Dealership Management:** This option is designed for students who want careers as equipment dealership managers or with equipment manufacturers. Technology, agribusiness, and communication are emphasized. Requirements include a minor in business administration or agribusiness, two paid internships with equipment dealerships, and an additional communication course.

Agricultural Systems Management Minor

A minor in Agricultural Systems Management is available to students from other majors by working with department faculty to select 16-21 credits in Agricultural Systems Management. A minimum of eight credits must be completed at NDSU.

Major Requirements

Major: Agricultural Systems Management

Degree Type: B.S.

Minimum Degree Credits to Graduate: 129

General Education Requirements for Baccalaureate Degree

- A list of approved general education courses is available here (<http://bulletin.ndsu.edu/past-bulletin-archive/2017-18/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).
- 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 the major, minor, and program emphases requirements for minimum grade restrictions, should they apply.

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.

† May be satisfied with courses required in the major. Review major requirements to determine if a specific upper division writing course is required.

ASM Major Requirements

Students must maintain a 2.25 GPA in ASM prefix courses.

Code	Title	Credits
Agricultural Systems Management Core Requirements		
ASM 115	Fundamentals of Agricultural Systems Management (Students transferring in or changing major to ASM with 32+ credits do not need to take ASM 115)	3
ASM 125	Fabrication & Construction Technology (Students transferring in or changing major to ASM with 32+ credits do not need to take ASM 125)	3
ASM 225	Computer Applications in Agricultural Systems Management	3
ASM 264	Natural Resource Management Systems	3
ASM 264L	Natural Resource Management Systems Laboratory	1
ASM 323	Post-Harvest Technology	3
ASM 354	Electricity and Electronic Applications	3
ASM 373	Tractors & Power Units	3
ASM 374	Power Units Laboratory	1
ASM 378	Machinery Principles and Management	3
ASM 429	Hydraulic Power Principles and Applications	3
ASM 454	Principles and Application of Precision Agriculture	3
ASM 475	Management of Agricultural Systems (Capstone Course)	2
ASM 491	Seminar	1
ASM 496	Field Experience (Expo)	1
Supporting Courses		
ABEN 189	Skills for Academic Success ¹	1
AGRI 150	Agriculture Orientation (Students transferring in 24 or more credits do not need to take AGRI 150.)	1
CHEM 121	General Chemistry I (May satisfy general education category S)	3
CHEM 122	General Chemistry II (May satisfy general education category S)	3
CSCI 114	Microcomputer Packages (May satisfy general education category S)	3
or MIS 116	Business Use of Computers	
ECON 201	Principles of Microeconomics (May satisfy general education category B)	3
ECON 202	Principles of Macroeconomics (May satisfy general education category B)	3
MATH 103	College Algebra (or higher - May not be required based on math placement.)	3
MATH 105	Trigonometry (or higher)	3
PHYS 211	College Physics I (May satisfy general education category S)	3
PHYS 211L	College Physics I Laboratory (Either course may satisfy general education category S)	1

or CHEM 121L	General Chemistry I Laboratory	
STAT 330	Introductory Statistics (May satisfy general education category R)	3
Select one of the following:		3 or 6
ACCT 102	Fundamentals of Accounting	
ACCT 200 & ACCT 201	Elements of Accounting I and Elements of Accounting II	
Specialized Options - Select from one of the specialized options listed below. A minor program of study may be completed in place of an option.		30-38
Total Credits		96-107

¹ AGRI189 is only required for first-time, first-year students—A first-time, first-year student is defined as a student who has not yet completed a college course as a college student. Students that are not first-time, first-year students that either transfer into the university or change their major are not required to take AGRI 189.

specialized options

Code	Title	Credits
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Applied Business Option: Minimum 30 Credits

This is the standard option for this major; students can declare another option or the minor option with the Office of Registration and Records.

Complete any course from the College of Ag, including Ag Econ as well as the BIO dept, and those listed under Program/Option Electives.

Select courses in agriculture science or supporting areas to enhance careers in Agribusiness. Select courses in consultation with an advisor.

Courses not on the list will require a substitution form to be submitted to the Office of Registration and Records.

Code	Title	Credits
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Production Agriculture Option: Minimum of 30 Credits

Complete any course from the College of Ag, including Ag Econ as well as the BIO dept, and those listed under Program/Option Electives

Select courses in consultation with an advisor. Courses not on the list will require substitution form to be submitted to the Office of Registration and Records.

Code	Title	Credits
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Dealership Management Option: Minimum 32-38

Minor in either Business Administration (24 credits) or Agribusiness (18 credits) required.	18-24
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ACCT 200 & ACCT 201	Elements of Accounting I and Elements of Accounting II	6
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ASM 496	Field Experience	2
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Elective	Complete any course from the College of Ag, including Ag Econ as well as the BIO dept, and those listed under Program/Option Electives	3
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Select one of the following:		3
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COMM 214	Persuasive Speaking	
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COMM 271	Listening and Nonverbal Communication	
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COMM 308	Business and Professional Speaking	
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COMM 315	Small Group Communication	
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Degree Requirements and Notes:

- Students must register for an ASM internship in the semester it is to be completed. This includes internships arranged with the NDSU Career Center.
- Transfer grades must be 'C' or higher to count towards major requirements.
- The completion of a minor program of study is suggested but not required.
- Option suggestions are: Accounting, Agribusiness, Animal Sciences, Business Administration, Construction Management, Crop & Weed Sciences, Industrial Engineering & Management, Public Relations & Advertising, or Range Science.

Minor Requirements

Agricultural Systems Management

Minor Requirements

Required Credits: 16

Code	Title	Credits
Required Courses		
ASM 264	Natural Resource Management Systems	3
ASM 354	Electricity and Electronic Applications	3
ASM 373	Tractors & Power Units	3
or ASM 378	Machinery Principles and Management	
Remaining Credits: Select 7 credits from the following:		7
ASM 225	Computer Applications in Agricultural Systems Management	
ASM 323	Post-Harvest Technology	
ASM 374	Power Units Laboratory	
ASM 429	Hydraulic Power Principles and Applications	
ASM 454	Principles and Application of Precision Agriculture	
ASM 475	Management of Agricultural Systems (Capstone)	
ASM 491	Seminar	
ASM 496	Field Experience (Expo)	
ASM 496	Field Experience	
Total Credits		16

Minor Requirements and Notes:

- A minimum of 8 credits must be taken at NDSU.
- Students must earn a minimum 2.00 GPA for the minor requirements.

Option Electives

May select any courses offered in the College of Ag, including Ag Econ, as well as the Biology department, and those courses listed here.

ASM 496 – Ag Tech Expo (1 add'l cr.) may be used as an Option Elective for all Specialized Options. ASM 496 – Field Exp/Internship, 1cr., may also be used as an Option Elective (maximum two credits) in the Applied Business and Production Agriculture Specialized Options only.

ACCT 201	Elements of Accounting II	
AGEC 3XX - 4XX		
ANSC 1XX - 4XX		
BUSN 340	International Business	
BUSN 487	Managerial Economics	
BUSN 3XX -4XX		
COMM 114	Human Communication	
COMM 212	Interpersonal Communication	
COMM 216	Intercultural Communication	
COMM 260	Introduction to Web Design	
COMM 308	Business and Professional Speaking	
COMM 313	Editorial Processes	
COMM 362	Principles of Design For Print	
COMM 434	Communication Law	
COMM 484	Organizational Advocacy and Issue Management	
COMM 485	Risk and Crisis Communication	
ECON 105	Elements of Economics	
ECON 341	Intermediate Microeconomics	
ECON 343	Intermediate Macroeconomics	
ECON 3XX - 4XX		
ENT 3XX - 4XX		
FIN 320	Principles of Finance	
FIN 3XX - 4XX		
GEOG 455	Introduction to Geographic Information Systems	
GEOG 456	Advanced Geographic Information Systems	
GEOG 470	Remote Sensing	

GEOG 480	Geographic Information Systems Pattern Analysis and Modeling
IME 335	Welding Technology
MGMT 320	Foundations of Management
MGMT 3XX - 4XX	
MRKT 320	Foundations of Marketing
MRKT 3XX - 4XX	
ME 311	Introduction To Aviation
ME 312	Introduction to Flight
ME 313	Commercial Instrument Ground School
PLSC 1XX - 4XX	
SOIL 2XX - 4XX	

Freshman

Fall	Credits	Spring	Credits
ASM 115	3	ASM 496 (Field Exp./Ag Tech Expo)	1
ASM 125	3	COMM 110	3
ABEN 189	1	CSCI 114 or MIS 116	3
AGRI 150	1	ENGL 120	3
ENGL 110	4	MATH 105	3
MATH 103	3	HUM/FINE ARTS	3
	15		16

Sophomore

Fall	Credits	Spring	Credits
ASM 225	3	ASM 264	3
ACCT 102	3	ASM 264L	1
ECON 201	3	ECON 202	3
PHYS 211	3	PSYC 111	3
PHYS 211L	1	Elective (Option)	3
Elective (Free)	3	Elective (Free)	3
	16		16

Junior

Fall	Credits	Spring	Credits
ASM 323	3	ASM 373	3
CHEM 121	3	ASM 374	1
STAT 330	3	CHEM 122	3
WELLNESS	2	ENGL 320, 321, 324, or 459	3
Elective (Option)	6	Elective (Option)	3
		Elective (Free)	3
	17		16

Senior

Fall	Credits	Spring	Credits
ASM 354	3	ASM 429	3
ASM 378	3	ASM 475	2
ASM 491	1	ASM 454	3
HUM/FINE ARTS	3	Elective (Option)	9

Elective (Option)	6	
	16	17

Total Credits: 129