PRECISION AGRICULTURE TECHNOLOGY & MANAGEMENT

Agricultural Technology Option

Department of Agricultural and Biosystems Engineering - North Dakota State University **FALL 2024***

Specialization/Minor

Advisor

Student ID #

FALL SPRING General Education Electives 300/400 Gen 300/400 Gen See www.ndsu.edu/registrar/gened for approved courses Course Crs Crs Grade Course Grade Ed Ed _evel2 Gen Ed Course Crs Grade Fundamentals of ASM ASM 115⁵ 3 COMM 110 Fund of Public Speaking 3 С Α 3 CSCI 114 or TL 116 Micro Pkg/Bus Use S 3 Fabrication & Const Tech 3 3 Α ASM 125⁵ ENGL 120 College Composition II С (<27 **ENGL 110³** College Composition I 3 3 В ECON 201 3 ACCT 1026 Fund of Accounting 2 PAG 115 Intro to Precision Ag 3 В **ECON 202** 3 Freshman 3 **HUM/FINE ARTS** 3 Α С MATH 103⁴ Algebra ENGL 320, 321, 324, 459 or approved course D \blacksquare (Double-count with A above) 3 14 15 G ● ECON 201 3 **ASM 225** Computer Appl in ASM 3 **ASM 348** Ag Technology Expo W 2 **AGEC 242** ASM 264 Natural Resource Mgmt Sys Intro to Ag Mgmt 3 3 23 Principles of Microeconomics General Education Categories: ECON 201 3 B/G **ASM 264L** Natural Resource Mgmt Sys Lab A - Humanities/Fine Arts G - Global Perspectives PHYS 120 Fundaments of Physics 3 S **ECON 202** Principles of Macroeconomics 3 B/G B - Social/Behavioral Sciences L - Co-requisite Lab PHYS 120L/CHEM 121L Choose either lab course S/L 1 Elective (Option) 3 В C - Communication R - Quantitative Reasoning Elective (Option) 3 Elective (Free) D - Cultural Diversity ■ S - Science & Technology F - First-Year Experience W - Wellness 16 15 ASM 373 ASM 323 Post Harvest Technology 3 Tractor and Power Units 3 Electives - 38 cr. total **CHEM 121** General Chemistry I 3 S ASM 374 Power Units Lab Select courses in consultation with your advisor. Crs Grade 88 **STAT 330** Introductory Statistics 3 R Upper-Level Writing (see side list) 3 С Course 2 W Wellness 3 Elective (Option) Program Electives - 27 credits required 09) Elective (Free) Elective (Option) 3 4 May select any courses listed on back) Complete your Degree Audit this semester **ASM 354** Electricity and Electronic Appl 3 **ASM 429** Hydraulic Principles/App 3 Crs Machinery Princ & Mgmt **ASM 378** 3 **ASM 475** Mgmt Agric Systems (capstone) 2 **HUM/FINE ARTS** 3 Elective (Option) 9 6) Elective (Option) Elective (Free) 6 3 15 17 Complete your Application for Graduation by Feb. 1st Free Electives - 11 credits allowed - 120 minimum total credits required. The last 30 credits must be earned in residence at NDSU. Total Credits

- A minor may require more than 16 credits, therefore, select electives apply. Check with the minor department for current requirements/changes and assignment of a minor advisor
- ASM students must maintain a 2.25 GPA in ASM courses. - Students must register for an internship in ASM the semester it is being taken. This includes Career Center internships.
- As a student at NDSU, it is your responsibility to know the requirements of your degree. To ensure all degree requirements are met, meet with your academic advisor regularly and follow your Academic Requirements Report found on Campus Connection. Required ASM courses are typically offered only once per year and all course offerings are subject to change.

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- ¹ Use this column to tally grades; use "T" for transfer courses and "IP" for courses currently in progress.
- 2 Use this column to tally 36 credits of 300/400 level courses required for graduation.
- ³ First year students with a composite ACT ENGL sub-score ≥ 18 should register for ENGL 120 (unless transfer credit for ENGL 120 is received). If ENGL 120 is completed with a grade of "C" or better, credits will be awarded for ENGL 110 with a passing grade (P). For more details on NDSU's English Placement process, go to http://english.ndsu.edu/placement_guidelines_writing_courses/.
- ⁴ MATH 103 or higher.

Student:

⁵ ASM 115 and ASM 125 are required for students who enter the ASM program with fewer than 32 earned credits.

⁶ May substitute with ACCT 200 AND 201 for a total of 6 credits.

Last Updated 03/10/2023

Potential Minors

Note – The ASM curriculum has the flexibility to double major or to major and double minor if you select courses appropriately.

Check with the minor department for current requirements/changes and assignment of a minor advisor.

Information on minors listed here was taken from the 2020/21 listings at http://bulletin.ndsu.edu/undergraduate/program-curriculum Minors in other disciplines are available.

Check minor requirements with the minor department no later than the beginning of the junior year. The minor department must certify completion of requirements before a minor will be recorded on the transcript.

Agribusiness Minor (18 credits)	Economics Minor (18 -19 credits)	Crop & Weed Sci	Crop & Weed Science Minor (18 credits)		
◆ECON 201-3	◆ECON 201-3	PLSC 110-3			
2 of the following (6 credits)	◆ECON 202-3	PLSC 225-3			
AGEC 242-3	ECON 341-3 or BUSN 487-4				
AGEC 244-3	ECON 343-3				
AGEC 246-3					
At least 9 add'l cr.	3 credits of 300/400 level ECON	6-7 cr. (2 courses required):	5-6 cr. of the following:		
ECON 341 or	AND	PLSC 315/L - 3/1	PLSC 300/400 level cr.		
any AGEC prefix course numbered 242 or higher	3 credits of 400 level ECON	PLSC 320-3	PLSC 215-1		
(excluding AGEC 397 & AGEC 496)		PLSC 323-3	SOIL 210-3		
			ENT 350-3		
			PPTH 324-3		

Precision Ag Minor (17 credits)		Animal Science Minor (16 credits)			Agricultural Comm Minor (21 credits)		
◆PAG 115-2		ANSC 114-3			COMM 112-3		
PAG 215-3		ANSC 220-3			COMM 133-3		
2 of the following (6 credits)		ANSC 223-2			COMM 200-3		
PAG 315-3 PAG 455-3		ANSC 240-3					
PAG 454-3							
Select 6 credits from the following:	Must include 1 of the following courses: Remaining credits may come from		ome from	Select 12 credits from the following:			
	ANSC 300-3	ANSC 370-3	those listed or the foll	lowing:			
See complete list of approved courses at:	ANSC 314-3	ANSC 444-3	ANSC 230-2	ANSC 426-2	COMM 245-3	COMM 362-3	
https://bulletin.ndsu.edu/undergraduate/program-	ANSC 323-3	ANSC 463-3	ANSC 231-2		COMM 308-3	COMM 375-3	
curriculum/precision-agriculture/#minortext	ANSC 324-3	ANSC 487-3	ANSC 232-2		COMM 310-3	COMM 465-3	
	ANSC 340-3		ANSC 344-3		COMM 313-3	COMM 470-3	
	ANSC 357-3		ANSC 380-2		COMM 330-3	COMM 485-3	

Courses already required for ASM major

Approved Course List for Option Electives

May select those courses listed here.

Additional courses may be acceptable. Please discuss with your advisor.

A C C T 204	Fundamentals of Association	2	IME 225	Malding Tackgalany	2
ACCT 201	Fundamentals of Accounting	3	IME 335	Welding Technology	3
ACEC 244	Agricultural Marketing	3	MGMT 320	Foundations of Management	3
AGEC 246	Intro to Agricultural Finance	3	MRKT 320	Foundations of Marketing	3
ANSC 114	Intro to Animal Sciences	3	ME 311	Intro to Aviation	3
ANSC 218	Anatomy & Physiology of Domestic Animals		ME 312	Intro to Flight	2
ANSC 220	Livestock Production	3	ME 313	Commercial Instrument Ground School	3
ANSC 222	Meat Animal Evaluation	2	NRM 452	Managing Natural & Rangeland using GIS	
ANSC 240	Meat Animal Eval & Mrkt		PLSC 110	World Food Crops	3
ANSC 320	Dairy Cattle Selection	1-2	PLSC 215	Weed Identification	1
ANSC 323	Fundamentals of Nutrition	3	PLSC 225	Principles of Crop Production	3
ANSC 330	Meat Selection, Grading & Judging	1-2	PLSC 315/L	Genetics/Genetics Lab	3/1
ANSC 331	Livestock Selection	1-2	PLSC 320	Principles of Forage Production	3
ANSC 357	Animal Genetics	3	PLSC 323	Principles of Weed Science	3
ANSC 463	Physiology of Reproduction	3	PAG 115L	Intro to Precision Ag Lab	1
ANSC 470	Applied Nutrition	4	PAG 215	Mapping of Precision Ag Data	3
ASM 234	3D Printing & Manufacturing		PAG 315	Electronic Systems in Precision Ag	3
BIOL 150	General Biology		PAG 454	Principles & Applications of Precision Ag	3
BIOL 150L	General Biology Lab		PPTH 324	Introductory Plant Pathology	3
BUSN 340	International Business	3	PPTH 454	Diseases of Field and Forage Crops	3
BUSN 487	Managerial Economics	4	SOIL 210	Introduction to Soil Science	3
COMM 212	Interpersonal Communication	3	SOIL 217	Introduction to Meteorology & Climatology	3
COMM 216	Intercultural Communication	3	SOIL 322	Soil Fertility & Fertilizers	3
COMM 308	Bus. & Prof. Speaking	3	SOIL 351	Soil Ecology	3
CSCI 479	Intro to Data Mining	3	PAG 455	Big Data Management in Precision Ag	3
ECON 105	Elements of Economics	3	PAG 475	Precision Ag Capstone	2
ECON 341	Intermediate Microeconomics	3	PAG 496	Field Experience/Internship	1
ECON 343	Intermediate Microeconomics	3	SOIL 410	Soils and Land Use	3
ENT 210	Insects, Humans & the Environment	3	SOIL 433	Soil Physics	3
ENT 350	General Entomology	3	SOIL 444	Soil Genesis and Survey	3
ENT 360	Economic Entomology	1-3	SOIL 447	Microclimatology	3
ENT 410	Intergrated Management of Pests	3	SOIL 465	Soil and Plant Analysis	3
ENT 470	Insect Ecology	3	SOIL 480	Soils and Pollution	3
FIN 320	Principles of Finance	3			
GEOG 105	Fundamentals of GIS				
GEOG 455	Introduction to Geographic Info Sys	4			
GEOG 456	Adv Geographic Info Sys	3			
GEOG 470	Remote Sensing	3			
GEOG 480	GIS Pattern Analysis & Modeling	3			
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Program Elective Course Suggestions:

Students graduating from the ASM program have a variety of career goals and opportunities. The lists below suggest courses which may help students prepare for their field(s) of interest. The lists are not all-inclusive and some suggestions may not be appropriate, e.g., livestock courses for crop farmers. The courses listed here meet the "Program Electives" category of the ASM curriculum. Prerequisite courses are not listed and may not count toward "Program Electives."

	Production Ag		Ranching		Agricultural Sales
AGEC 242	Introduction to Agricultural Mangement	ANSC 114	Introduction to Animal Sciences	AGEC 242	Introduction to Agricultural Mangement
AGEC 244	Agricultural Marketing	ANSC 220	Livestock Production	AGEC 244	Agricultural Marketing
AGEC 246	Introduction to Agricultural Finance	ANSC 331	Livestock Selection	AGEC 246	Introduction to Agricultural Finance
ANSC 114	Introduction to Animal Sciences	ANSC 357	Animal Genetics	AGEC 344	Agricultural Price Analysis
ANSC 123	Feed and Feeding	ANSC 463	Physiology of Reproduction	AGEC 347	Principles of Real Estate
ANSC 220	Livestock Production	ANSC 470	Applied Nutrition	AGEC 444	Commodity Trading
and/or	add'l ANSC courses for specific animals as approp.	and/or	add'l ANSC courses as approp.	AGEC 446	Agribusiness Finance
ENT 210	Insects, Humans and the Environment	RNG 336	Intro to Range Management	AGEC 450	National AgriMarketing Association (NAMA)
or ENT 350	General Entomology	RNG 450	Range Plants	AGEC 474	Cooperatives
or ENT 360	Economic Entomology	RNG 452	Geographic Info Systems in Range Survey	and/or add'l AGEC courses as approp.	
PLSC 110	World Food Crops	RNG 453	Rangeland Resources Watershed Mgmt	PLSC 215	Weed Identification
PLSC 215	Weed Identification	RNG 456	Range Habitat Mgmt	PLSC 323	Principles of Weed Science
PLSC 225	Principles of Crop Production	RNG 458	Grazing Ecology	COMM 212	Interpersonal Communication
and/or	add'l PLSC courses for specific crops as approp.	RNG 462	Natural Resource & Rangeland Planning	COMM 308	Business and Professional Speaking
PPTH 324	Introductory Plant Pathology	and/or	add'l RNG courses as approp.	BUSN 487	Managerial Economics
PPTH 454	Diseases of Field and Forage Crops	PLSC 110	World Food Crops		
SOIL 210	Introduction to Soil Science	PLSC 215	Weed Identification		Grain Marketing
SOIL 217	Introduction to Meterology & Climatology	PLSC 225	Principles of Crop Production	AGEC 242	Introduction to Agricultural Mangement
SOIL 322	Soil Fertility and Fertilizers	PLSC 320	Principles of Forage Production	AGEC 244	Agricultural Marketing
and/or	add'l SOIL courses as approp.	PLSC 323	Principles of Weed Science	AGEC 246	Introduction to Agricultural Finance
		PLSC 433	Weed Biology & Ecology	AGEC 344	Agricultural Price Analysis
	Precision Agriculture	PLSC 453	Advanced Weed Science	AGEC 444	Commodity Trading
GEOG 105	Fundamentals of Geographic Info Systems (GIS)	and/or	add'l PLSC courses as approp.	AGEC 446	Agribusiness Finance
GEOG 455	Intro. to Geographic Information Systems	SOIL 210	Introduction to Soil Science	and/or a	add'l AGEC courses as approp.
GEOG 456	Adv. Geographic Inormation Systems	SOIL 217	Introduction to Meterology & Climatology	SOILS 210	Introduction to Soil Science
GEOG 470	Remote Sensing	SOIL 332	Soil Fertility and Fertilizers	SOILS 322	Soil Fertility and Fertilizers
GEOL/GEOG 4	80 GIS Pattern Analysis & Modeling	SOIL 410	Soils and Land Use	PLSC 110	World Food Crops
PAG 115L	Intro to Precision Ag Lab	and/or	add'l SOIL courses as approp.	PLSC 215	Weed Identification
PAG 215	Mapping of Precision Ag Data	PPTH 454	Diseases of Field and Forage Crops	PLSC 315/L	Genetics & Lab
PAG 315	Electronic Systems in Precision Ag			PLSC 323	Principles of Weed Science
PAG 454	Principles & Applications of Precision Ag			PLSC 335	Seed Technology & Production
PAG 455	Big Data Management in Precision Ag			PLSC 340	Grain Grading
PAG 475	Precision Ag Capstone				
PAG 496	Field Experience/Internship				
SOIL 210	Intro. to Soil Science				
SOIL 322	Soil Fertility and Fertilizers				
ME 311	Intro to Aviation				
ME 312	Intro to Flight				

ME 313

Commercial Instrument Ground School