

AGRICULTURAL SCIENCE, B.TECH.

Major Code: 2732

The Agricultural Science B.Tech. program is designed to expose students to a wide breadth of courses within agriculture, and consists of four tracks: Agronomy, Agricultural Outreach and Education, Dairy Management, and Livestock Management. The flexibility in this program allows students to tailor their degree program to best fit their individual needs, with all graduates completing a set of core courses common across the four tracks.

Graduates of the Agricultural Science B.Tech. program will be trained to succeed across a wide array of agricultural specialties, from employment in the agricultural service sector to on-farm management of dairy and other livestock species, or in the public sector as agricultural educators.

Students who choose the Agricultural Outreach and Education track will be well-poised upon the completion of their coursework at SUNY Morrisville to enter graduate school pursuing an Education Master's degree. Students interested in Teacher Certification will have the option to complete their Content Core credits at SUNY Morrisville, and then complete their Education credits at SUNY Oswego. They can also seek employment with a bachelor's degree at private k-12 institutions, not-for-profit organizations, or as a cooperative extension educator.

Regardless of the track, students within the Agricultural Science B.Tech. program will receive an education that is rooted in applied learning. The state-of-the-art facilities at the SUNY Morrisville campus provide the opportunity for students to apply the theory learned in lecture in a real-world setting.

- The Dairy Complex operates in a "for profit" manner, which is unique to many other programs in that students are able to actually illicit changes and see the impact it has on farm operations and profitability.
- The soils laboratory allows students to learn the techniques involved in agronomic and environmental soil testing, with the hundreds of acres of farmland serving as a real-world laboratory for our pastures and field crops courses.
- The expanding livestock options housed at the Dairy Complex provide students with the opportunity to learn how to manage and work with many livestock species, as much of the care provided for these animals is carried out by students in our agricultural programs.
- The vast agricultural opportunities available at SUNY Morrisville make it a premier option for individuals interested in pursuing an Agricultural Outreach and Education degree, providing diverse agricultural course offerings for them to choose from, preparing them to be the future agricultural educators in New York.

Students will also benefit from the new state-of-the-art Renewable Energy facility on campus, the newly renovated Dairy Processing and Specialty Crops facility, Horticultural greenhouses and an Aquaculture center, where innovative food production practices can be explored.

The Agricultural Science B.Tech. program requires completion of a minimum of 120 credit hours to be eligible for graduation.

Program Learning Outcomes

The objective of the Agricultural Science B.Tech. program is to use hands-on experiential learning practices to prepare graduates to

be leaders in their chosen agricultural field. The degree consists of four tracks: Agronomy, Agricultural Outreach and Education, Dairy Management, and Livestock Management. Each of these options are designed to provide students with a real-world experience, utilizing the wide array of agricultural facilities on campus.

Upon completion of the Agricultural Science B.Tech. program, a successful graduate will:

- Utilize the developed expertise in concepts, theories, and emerging methodologies to succeed in tackling real-world issues specific to agriculture in the chosen degree track.
- Recognize problems specific to agriculture in the chosen degree track and formulate solutions to such problems.
- Demonstrate problem-solving and critical thinking skills to solve problems in the practice of agriculture.
- Apply practical knowledge and skills specific to agriculture in the chosen degree track.

SUNY General Education Requirements: (<https://system.suny.edu/academic-affairs/acaproplan/general-education/suny-ge/>) All SUNY Morrisville B.Tech degree programs require completion of at least 30 credits of SUNY GE, a minimum of seven (out of ten) knowledge and skills areas (including the four required knowledge and skills areas as indicated below), and completion of the two core competencies. The specific courses required within each knowledge and skills area/core competency for this degree program are outlined below.

Knowledge and Skills Areas:

Communication Written & Oral (required)	as advised based on chosen track
Diversity: Equity, Inclusion, and Social Justice (required)	as advised based on chosen track
Mathematics (and Quantitative Reasoning) (required)	as advised based on chosen track
Natural Sciences (and Scientific Reasoning) (required)	as advised based on chosen track
Humanities	as advised based on chosen track
Social Sciences	as advised based on chosen track
The Arts	as advised based on chosen track
US History and Civic Engagement	as advised based on chosen track
World History and Global Awareness	as advised based on chosen track
World Languages	as advised based on chosen track

Core Competencies:

Information Literacy (required)	as advised based on chosen track
Critical Thinking and Reasoning (required)	as advised based on chosen track

A minimum of 120 credits is required for degree completion.

Code	Title	Credits
Dairy Management Track		
DANS 100	Dairy Nutrition	3
DANS 110	Breeding Dairy Cattle	3
DANS 120	Anatomy & Physiology-Dairy Cow	3
DANS 140	Dairy Cattle Judging	1

DANS 150	Dairy Farm Practicum I	2	DANS 100	Dairy Nutrition	3
DANS 151	Dairy Farm Practicum II	2	or ESCI 210	Equine Nutrition	
DANS 160	Introduction to Dairy Science	3	DANS 120	Anatomy & Physiology-Dairy Cow	3
DANS 220	Dairy Herd Management	3	or ESCI 110	Equine Anatomy & Physiology	
DANS 225	Dairy Production & Management	3	AGBS 100	Agricultural Economics	3
DANS 240	Dairy Farm Data Management	1	or AGBS 225	Environmental Economics	
DANS 305	Dairy Calf & Heifer Management	3	AGBS 200	Marketing Agricultural Products	3
DANS 340	Advanced Dairy Reproduction	3	AGBS 240	Farm Management and Finance	4
DANS 450	Advanced Dairy Herd Mgt	4	AGBS 305	Ag Financial Decision Making	3
AGBS 100	Agricultural Economics	3	AGRO 110	Soil Science	3
or AGBS 225	Environmental Economics		AGRO 210	Field Crops	3
AGBS 200	Marketing Agricultural Products	3	AGRO 310	Pasture Mgt and Forages Prod	3
AGBS 240	Farm Management and Finance	4	AGSC 120	Domestic Animal Behavior	3
AGBS 305	Ag Financial Decision Making	3	AGSC 137	Agricultural Statistics	3
AGNR 200	Job Prep Skills & Resources	1	Select 2 credits from the following:		2
AGRO 110	Soil Science	3	AGSC 132	Introduction to Precision Farming	
AGRO 210	Field Crops	3	OFFT 100	Introduction to MS Word	
AGRO 310	Pasture Mgt and Forages Prod	3	OFFT 106	Personal Computer Keyboarding	
Select two credits from the following:		2	or OFFT 109	Introduction to MS PowerPoint	
AGSC 132	Introduction to Precision Farming		or OFFT 110	Introduction to MS Excel	
OFFT 100	Introduction to MS Word		AGSC 460	Agricultural Science Capstone	3
OFFT 106	Personal Computer Keyboarding		or AGBS 405	Farm & Rural Mngt Capstone	
or OFFT 109	Introduction to MS PowerPoint		AGSC 480	Internship Agricultural Scienc (If 12 credits are 12-15	
or OFFT 110	Introduction to MS Excel		selected, a 3-credit upper-level elective in DANS,	selected, a 3-credit upper-level elective in DANS,	
AGSC 137	Agricultural Statistics	3	AGRO, AGSC, AGBS, BSAD, ANSC, AGNR or SPPR	AGRO, AGSC, AGBS, BSAD, ANSC, AGNR or SPPR	
AGSC 350	Animal Genetics	3	must be taken)	must be taken)	
AGSC 460	Agricultural Science Capstone	3	AGNR 200	Job Prep Skills & Resources	1
AGSC 480	Internship Agricultural Scienc	12-15	ENRM 450	Environmental & Natural Resource Management	1
ENRM 450	Environmental & Natural Resource Management	1	Internship Orientation	Internship Orientation	
COMP 310	Advance Tech Communication	3	COMP 310	Advance Tech Communication	3
Accounting as Advised		3	Accounting as Advised		3
SUNY General Education Diversity: Equity, Inclusion, and Social		3	SUNY General Education World Languages as Advised		3
Justice as Advised			SUNY General Education Communication Written and Oral as Advised		3-6
SUNY General Education World Languages as Advised		3	SUNY General Education Diversity: Equity, Inclusion, and Social		3
SUNY General Education Communication Written and Oral as Advised		3-6	Justice as Advised		
SUNY General Education Courses in the Arts, Humanities, Social		6	Electives in DANS, AGSC, ANSC, AGBS, AGRO, AGEN, DTEC, AUTO, or		6
Science, US History and Civic Engagement, or World History and			SPPR as Advised		
Global Awareness as Advised			General Electives as Advised		6
Electives in DANS, AGSC, ANSC, AGNR as Advised		6	SUNY General Education Courses in the Arts, Humanities, Social		6
General Electives as Advised		6	Science, US History and Civic Engagement, or World History and		
300-400 Level Electives in DANS, AGRO, AGSC, AGBS, BSAD, ANSC,		4-7	Global Awareness as Advised		
AGNR, SPPR as Advised			300-400 Level Electives in DANS, AGRO, AGSC, AGBS, BSAD, ANSC,		17-21
			AGNR or SPPR as Advised		
Total Credits		118-127	Total Credits		117-127

Code	Title	Credits
Livestock Track		
ANSC 101	Intro to Animal Science	3
ANSC 110	Livestock Production Mgmt/Tech	3
ANSC 150	Live Animal Evaluation	2
DANS 110	Breeding Dairy Cattle	3
DANS 160	Introduction to Dairy Science	3
or ANSC 200	Sheep Industry/Prodction Syst	

Code	Title	Credits
Agronomy Track		
AGNR 200	Job Prep Skills & Resources	1
AGRO 110	Soil Science	3
AGRO 210	Field Crops	3
AGRO 215	Soil Fertility & Fertilizers	3
AGRO 305	Adv Soil & Water Conservation	3
AGRO 310	Pasture Mgt and Forages Prod	3
AGRO 320	Urban Agriculture and Food Production	3

AGSC 115	Agricultural Science & Context	1
AGSC 132	Introduction to Precision Farming	2
AGSC 137	Agricultural Statistics	3
or MATH 123	Elementary Statistics	
AGSC 250	Application in Ag Science	3
AGSC 460	Agricultural Science Capstone	3
AGSC 480	Internship Agricultural Scienc (If 12 credits are selected, a 3-credit upper-level elective in DANS, AGRO, AGSC, AGBS, BSAD, ANSC, AGNR or SPPR must be taken)	12-15
ANSC 101	Intro to Animal Science	3
AGBS 100	Agricultural Economics	3
or AGBS 225	Environmental Economics	
BIOL 102	Botany-Form Function Seed Plt	3
CHEM 101	Basic Chemistry	4
or CHEM 110	Contemporary Chemistry	
or CHEM 121	General College Chemistry I	
or ENSC 125	Environmental Chemistry	
COMP 310	Advance Tech Communication	3
ENRM 450	Environmental & Natural Resource Management Internship Orientation	1
ENSC 106	Pesticide Use and Handling	2
ENSC 107	Integrated Pest Management	1
HORT 150	Fruit & Vegetable Production	3
SUNY General Education Communication Written and Oral as Advised		3-6
SUNY General Education Diversity: Equity, Inclusion, and Social Justice as Advised		3
SUNY General Education World Languages as Advised		3
Elective Credits in AGBS, AGEN, AGNR, AGSC, AGRO, ANSC, AUTO, CANA, DANS, DTEC, HORT, ENRM, ENSC, ENVT, NATR, RENG or SPPR		12
General Electives		7
SUNY General Education Arts, Humanities, Social Sciences, US History & Civic Engagement or World History & Global Awareness		6
300-400 Level Electives in AGEN, AGNR, AGSC, AGRO, ANSC, CANA, 14-17 DANS, HORT, ENRM, ENSC, ENVT, NATR, RENG or SPPR		7
Total Credits		114-123

Code	Title	Credits
Agricultural Outreach and Education Track		
AGRO 110	Soil Science	3
AGRO 210	Field Crops	3
AGRO 305	Adv Soil & Water Conservation	3
AGRO 310	Pasture Mgt and Forages Prod	3
AGRO 320	Urban Agriculture and Food Production	3
AGSC 115	Agricultural Science & Context	1
AGSC 132	Introduction to Precision Farming	2
AGSC 137	Agricultural Statistics	3
or MATH 123	Elementary Statistics	
AGSC 460	Agricultural Science Capstone	3
AGSC 480	Internship Agricultural Scienc (If 12 credits are selected, a 3-credit upper-level elective in DANS, AGRO, AGSC, AGBS, BSAD, ANSC, AGNR or SPPR must be taken)	12-15
ANSC 101	Intro to Animal Science	3

AGBS 100	Agricultural Economics	3
AGBS 240	Farm Management and Finance	4
BIOL 102	Botany-Form Function Seed Plt	3
CHEM 101	Basic Chemistry	4
or CHEM 110	Contemporary Chemistry	
or CHEM 121	General College Chemistry I	
or ENSC 125	Environmental Chemistry	
COMP 310	Advance Tech Communication	3
ENSC 106	Pesticide Use and Handling	2
ENSC 107	Integrated Pest Management	1
AGNR 200	Job Prep Skills & Resources	1
EDU 101	Introduction to Teaching	3
or JOUR 101	Intro to Mass Communication	
EDU 201	Foundations of Education	3
EDU 202	Guided Fieldwork in Education	1-3
or JOUR 272	Public Relations Publicity Mgt	
ENRM 450	Environmental & Natural Resource Management Internship Orientation	1
SUNY General Education World Languages as Advised		3
SUNY General Education Communication Written and Oral as Advised		3-6
SUNY General Education Diversity: Equity, Inclusion, and Social Justice as Advised		
Electives as advised in AGEN, AGNR, AGSC, AGRO, ANSC, AGBS, AUTO, CANA, DANS, DTEC, HORT, ENRM, ENSC, ENVT, NATR, RENG or SPPR		14-15
General Electives		3
SUNY General Education Art, Humanities, Social Sciences, US History & Civic Engagement, or World History and Global Awareness as Advised		6
300-400 Level Electives in AGBS, AGEN, AGNR, AGSC, AGRO, ANSC, 14-17 BSAD, CANA, DANS, HORT, ENRM, ENSC, ENVT, NATR, RENG or SPPR as Advised		7
Total Credits		111-123

Suggested Course Sequence

Dairy Management Track

Course	Title	Credits
Year 1		
Fall		
DANS 100	Dairy Nutrition	3
DANS 150	Dairy Farm Practicum I	2
DANS 160	Introduction to Dairy Science	3
AGBS 100	Agricultural Economics	3
AGNR 200	Job Prep Skills & Resources	1
AGRO 110	Soil Science	3
Credits		15
Spring		
DANS 110	Breeding Dairy Cattle	3
DANS 120	Anatomy & Physiology-Dairy Cow	3
DANS 140	Dairy Cattle Judging	1
DANS 151	Dairy Farm Practicum II	2
DANS 240	Dairy Farm Data Management	1
AGBS 200	Marketing Agricultural Products	3
SUNY General Education Communication Written and Oral as Advised		3
Credits		16

Year 2		
Fall		
DANS 210	Dairy Health	3
DANS 220	Dairy Herd Management	3
AGRO 210	Field Crops	3
AGBS 240	Farm Management and Finance	4
SUNY General Education as Advised - Humanities, Art, Social Sciences, World Language, US History & Civic Engagement, or World History and Global Awareness		3
Credits		16
Spring		
DANS 225	Dairy Production & Management	3
AGSC 137	Agricultural Statistics	3
ACCT 101	Principles of Accounting I	3
SUNY General Education as Advised - Humanities, Art, Social Sciences, World Language, US History & Civic Engagement, or World History and Global Awareness		3
SUNY General Education Diversity, Equity, Inclusion and Social Justice as Advised		3
Credits		15
Year 3		
Fall		
DANS 340	Advanced Dairy Reproduction	3
AGBS 305	Ag Financial Decision Making	3
AGRO 310	Pasture Mgt and Forages Prod	3
AGSC 320	Contemporary Issues in Agricul	3
AGBS 250	Decision Making for Ag Manager	3
AGSC 132	Introduction to Precision Farming	2
Credits		17
Spring		
DANS 305	Dairy Calf & Heifer Management	3
COMP 310	Advance Tech Communication	3
SPAN 101	Beginning College Spanish 1	3
ENRM 450	Environmental & Natural Resource Management Internship Orientation	1
AUTO 102	Metals	3
Credits		13
Year 4		
Fall		
DANS 450	Advanced Dairy Herd Mgt	4
AGSC 350	Animal Genetics	3
AGSC 460	Agricultural Science Capstone	3
BSAD 300	Management Communications	3
ANSC 101	Intro to Animal Science	3
Credits		16
Spring		
AGSC 480	Internship Agricultural Scienc	12-15
Credits		12-15
Total Credits		120-123

Livestock Track

Course	Title	Credits
Year 1		
Fall		
ANSC 101	Intro to Animal Science	3
DANS 150	Dairy Farm Practicum I	2
DANS 100	Dairy Nutrition	3
AGBS 100	Agricultural Economics	3
AGNR 200	Job Prep Skills & Resources	1
ACCT 101	Principles of Accounting I	3
Credits		15
Spring		
ANSC 150	Live Animal Evaluation	2
AGRO 110	Soil Science	3
DANS 110	Breeding Dairy Cattle	3

AGBS 200	Marketing Agricultural Prodcpts	3
AGSC 120	Domestic Animal Behavior	3
SUNY General Education Communication Written and Oral as Advised		3
Credits		17
Year 2		
Fall		
ANSC 110	Livestock Production Mgmt/Tech	3
AGRO 210	Field Crops	3
AGBS 240	Farm Management and Finance	4
AGSC 132	Introduction to Precision Farming	2
SUNY General Education Diversity, Equity, Inclusion and Social Justice as Advised		3
Credits		15
Spring		
ANSC 200	Sheep Industry/Prodcution Syst	3
DANS 120	Anatomy & Physiology-Dairy Cow	3
DANS 115	Dairy Cattle Artificial Insem	1
AGRO 215	Soil Fertility & Fertilizers	3
AGSC 137	Agricultural Statistics	3
SUNY General Education Art, Humanities, Social Sciences, World Language, US History & Civic Engagement or World History & Global Awareness as Advised		3
Credits		16
Year 3		
Fall		
DANS 210	Dairy Health	3
AGBS 305	Ag Financial Decision Making	3
AGRO 310	Pasture Mgt and Forages Prod	3
DANS 340	Advanced Dairy Reproduction	3
AGBS 250	Decision Making for Ag Manager	3
Credits		15
Spring		
DANS 305	Dairy Calf & Heifer Management	3
ENRM 450	Environmental & Natural Resource Management Internship Orientation	1
COMP 310	Advance Tech Communication	3
AGSC 320	Contemporary Issues in Agricul	3
AGBS 350	Ag Business Development	3
AUTO 102	Metals	3
Credits		16
Year 4		
Fall		
AGSC 350	Animal Genetics	3
AGSC 460	Agricultural Science Capstone	3
BSAD 300	Management Communications	3
SPAN 101	Beginning College Spanish 1	3
AGRO 320	Urban Agriculture and Food Production	3
Credits		15
Spring		
AGSC 480	Internship Agricultural Scienc	12-15
Credits		12-15
Total Credits		121-124

Agronomy Track

Course	Title	Credits
Year 1		
Fall		
AGRO 115	Principles of Compost Mgmt	3
AGSC 115	Agricultural Science & Context	1
ANSC 101	Intro to Animal Science	3
AGBS 100	Agricultural Economics	3
AGNR 200	Job Prep Skills & Resources	1

ENSC 125	Environmental Chemistry	4
Credits		15
Spring		
AGRO 110	Soil Science	3
BIOL 102	Botany-Form Function Seed Plt	3
ENSC 106	Pesticide Use and Handling	2
HORT 150	Fruit & Vegetable Production	3
SUNY General Education Communication Written and Oral as Advised		3
Credits		14
Year 2		
Fall		
AGRO 210	Field Crops	3
AGSC 132	Introduction to Precision Farming	2
AGEN 105	Principles of Farm Machinery	2
AGEN 115	Ag Engr Industry Overview	1
DANS 160	Introduction to Dairy Science	3
ENSC 107	Integrated Pest Management	1
SPAN 101	Beginning College Spanish 1	3
Credits		15
Spring		
AGSC 137	Agricultural Statistics	3
AGRO 215	Soil Fertility & Fertilizers	3
AGSC 250	Application in Ag Science	3
HORT 241	Plant Protection	3
SUNY General Education Diversity, Equity, Inclusion and Social Justice as Advised		3
Credits		15
Year 3		
Fall		
AGRO 310	Pasture Mgt and Forages Prod	3
COMP 310	Advance Tech Communication	3
SUNY General Education Art, Humanities, Social Sciences, World Language, US History & Civic Engagement or World History & Global Awareness as Advised		3
CANA 350	Hemp Production & Processing	3
RENG 310	Biomass Energy Resources	3
Credits		15
Spring		
AGRO 305	Adv Soil & Water Conservation	3
AGRO 320	Urban Agriculture and Food Production	3
AGSC 320	Contemporary Issues in Agricul	3
AGNR 400	Instructional Assistance Exp	4
ENRM 345	Surface & Groundwater Mgt.	3
SUNY General Education Art, Humanities, Social Sciences, World Language, US History & Civic Engagement or World History & Global Awareness as Advised		3
Credits		19
Year 4		
Fall		
AGSC 460	Agricultural Science Capstone	3
ENRM 450	Environmental & Natural Resource Management Internship Orientation	1
General Electives as Advised		3
RENG 311	Biofuels	3
AGNR 399	Research and Mgmt in Agr	4
Credits		14
Spring		
AGSC 480	Internship Agricultural Scienc	12-15
Credits		12-15
Total Credits		119-122

Outreach and Education Track

Course	Title	Credits
Year 1		
Fall		
AGRO 115	Principles of Compost Mgmt	3
AGSC 115	Agricultural Science & Context	1
ANSC 101	Intro to Animal Science	3
AGNR 200	Job Prep Skills & Resources	1
ENSC 125	Environmental Chemistry	4
EDU 101	Introduction to Teaching	3
Credits		15
Spring		
AGRO 110	Soil Science	3
BIOL 102	Botany-Form Function Seed Plt	3
HORT 150	Fruit & Vegetable Production	3
SUNY General Education Diversity: Equity, Inclusion, and Social Justice as Advised		
DANS 110	Breeding Dairy Cattle	3
Credits		12
Year 2		
Fall		
AGRO 210	Field Crops	3
AGSC 132	Introduction to Precision Farming	2
AGBS 240	Farm Management and Finance	4
PSYC 101	Introduction to Psychology	3
DANS 160	Introduction to Dairy Science	3
ENSC 107	Integrated Pest Management	1
Credits		16
Spring		
ENSC 106	Pesticide Use and Handling	2
SUNY General Education Art, Humanities, Social Sciences, World Language, US History & Civic Engagement or World History & Global Awareness as Advised		3
EDU 201	Foundations of Education	3
SUNY General Education World Languages as Advised		3
AGBS 250	Decision Making for Ag Manager	3
EDU 202	Guided Fieldwork in Education	1
Credits		15
Year 3		
Fall		
AGRO 310	Pasture Mgt and Forages Prod	3
COMP 310	Advance Tech Communication	3
RENG 310	Biomass Energy Resources	3
CHEM 110	Contemporary Chemistry	4
PSYC 242	Adolescent Development	3
Credits		16
Spring		
AGRO 305	Adv Soil & Water Conservation	3
AGRO 320	Urban Agriculture and Food Production	3
AGSC 320	Contemporary Issues in Agricul	3
BSAD 300	Management Communications	3
AGSC 137	Agricultural Statistics	3
AGBS 225	Environmental Economics	3
Credits		18
Year 4		
Fall		
AGSC 460	Agricultural Science Capstone	3
ENRM 450	Environmental & Natural Resource Management Internship Orientation	1
CANA 350	Hemp Production & Processing	3
RENG 311	Biofuels	3
HORT 200	Greenhouse Management	3
Credits		13

Spring

AGSC 480	Internship Agricultural Scienc	12-15
Credits		12-15
Total Credits		117-120