

APPLIED AGRICULTURE CERTIFICATE

College of Agriculture and Natural Resources

Institute of Applied Agriculture

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Through the Institute of Applied Agriculture (IAA) students earn a UMD lower-division certificate in Applied Agriculture. Students may select one of the following concentration tracks: Agricultural Business Management, Agricultural Leadership and Communication, Environmental Stewardship, General Turfgrass Management, Golf Course Management, Landscape Management, Ornamental Horticulture, Sports Turf Management, and Sustainable Agriculture. The IAA provides students with the entrepreneurial and technical skills needed to lead successful agricultural enterprises and manage natural resources responsibly. Upon completion of the program, some students join the workforce, while others pursue further education. Students who wish to earn a bachelor's degree may apply to transfer into University of Maryland undergraduate degree programs.

The IAA has a separate admission policy (<http://iaa.umd.edu/prospective-students/admissions/>) which can be found on its website; prospective students apply directly to the IAA.

Agriculture Forward (<https://iaa.umd.edu/agriculture-forward/>) at the **University of Maryland** (Ag Forward) is an accelerated program for first-time university students who are interested in earning dual credentials from the University of Maryland, College Park. Students begin their studies in the Institute of Applied Agriculture (IAA). After successfully completing 30 credits at the IAA, completing General Education requirements in English and Math and earning a GPA of at least 3.0, students are eligible to transfer into a bachelor's degree program within the College of Agriculture and Natural Resources. Students continue to earn their Certificate in Applied Agriculture while working on their bachelor's degree. Applications for Agriculture Forward, a competitive program, are accepted each spring until March 15.

Program Learning Outcomes

1. Demonstrate the ability to communicate clearly and appropriately with a range of audiences, both in writing and orally; demonstrate proficiency in professional presentation skills.
2. Analyze, apply, and create financial statements; identify and analyze potential markets; create effective business plans.
3. Demonstrate understanding of plant health care principles and best practices, including integrated pest management strategies.
4. Demonstrate understanding of inequities and cultural biases in the field of agriculture across dimensions such as race, gender, citizenship status, disability status, economic class, and others; display cultural competence and sensitivity in communicating with a variety of stakeholders.

REQUIREMENTS

A certificate in Applied Agriculture requires students to complete 60 credits and a 320-hour internship. Each concentration track requires courses specific to its focus and allows for elective courses so students may pursue their areas of interest. All concentration tracks include the following required elements:

- fundamental studies (math, English, and oral communication)
- fundamental agricultural science (plant, animal, or nutrition)
- applied agriculture and career readiness (soil science; pesticide use and safety; internship; and professional development)
- business management (courses selected from a list that includes agricultural entrepreneurship, marketing, human resources management, finance, business management, alternative enterprises, and business law).

All concentration tracks, aside from Agricultural Leadership and Communication, also require Fundamentals of Agricultural Mechanics. Please see more detailed requirements for each concentration track below. Complete curriculum guides, course descriptions, and two-year plans may be found on our website at go.umd.edu/program-plans (<http://go.umd.edu/program-plans/>).

Agricultural Business Management

Course	Title	Credits
Fundamental Studies		
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science	4
	or PLSC110/11 Introduction to Horticulture	
	or PLSC112/11 Introductory Crop Science	
	or ANSC101 Principles of Animal Science	
	& ANSC103 and Principles of Animal Science Laboratory	
	or NFSC100 Elements of Nutrition	
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
INAG250	Fundamentals of Agricultural Mechanics	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business Management		
INAG102	Agricultural Entrepreneurship	3
INAG103	Agricultural Marketing	3
INAG201	Agricultural Human Resources Management	3
INAG203	Agricultural Finance	3
INAG204	Agricultural Business Management	3
INAG206	Agricultural Business Law	3
Applied Agriculture Electives		
	Student will choose 17-18 credits of advisor-approved electives to complete a total of 60 credits for the certificate.	17
Total Credits		60

Agricultural Leadership and Communication

Course	Title	Credits
Fundamental Studies		
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science	4
	or PLSC110/11 Introduction to Horticulture	
	or PLSC112/11 Introductory Crop Science	
	or ANSC101 Principles of Animal Science and Principles of Animal Science Laboratory	
	or NFSC112 Food: Science and Technology	
Applied Agriculture		
INAG105	Soils and Fertilizers (Students pursuing nutrition-related careers may substitute NFSC100 for INAG105)	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business Management		
INAG103	Agricultural Marketing	3
Business Management Restricted Electives		9
Choose three of the following courses:		
INAG102	Agricultural Entrepreneurship	
INAG201	Agricultural Human Resources Management	
INAG203	Agricultural Finance	
INAG204	Agricultural Business Management	
INAG206	Agricultural Business Law	
Concentration Requirements		
INAG131	Introduction to Agricultural Policy and Communication	3
INAG132	Agricultural Leadership and Teamwork	3
INAG252	Agricultural Public Relations	3
INAG253	Agricultural Strategic Communication	3
Applied Agriculture Electives		
Student will choose 16-17 credits of advisor-approved electives to complete their 60 credits.		16
Total Credits		60

Sustainable Agriculture

Course	Title	Credits
Fundamental Studies		
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science	4
	or PLSC110/11 Introduction to Horticulture	
	or PLSC112/11 Introductory Crop Science	

	or ANSC101 Principles of Animal Science and Principles of Animal Science Laboratory	
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
INAG123	People, Planet, and Profit: Digging Into Sustainable Agriculture	3
INAG248	Topics in Sustainable Agriculture	1
INAG250	Fundamentals of Agricultural Mechanics	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business Management		
INAG102	Agricultural Entrepreneurship	3
INAG103	Agricultural Marketing	3
INAG201	Agricultural Human Resources Management	3
INAG203	Agricultural Finance	3
INAG204	Agricultural Business Management	3
INAG206	Agricultural Business Law	3
Electives		
Student will choose 13-14 credits of advisor-approved electives to complete the 60 credits for the certificate. Sustainable Agriculture students may choose to take INAG 099, Cooperative Education, in lieu of the electives; consult an advisor for details.		13
Total Credits		60

Environmental Stewardship

Course	Title	Credits
Fundamental Studies		
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (or other math course)	3
	or INAG104	
ENGL101	Academic Writing	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science	4
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
INAG123	People, Planet, and Profit: Digging Into Sustainable Agriculture	3
INAG231	Insects of Ornamentals and Turf	3
INAG250	Fundamentals of Agricultural Mechanics	3
INAG272	Principles of Arboriculture	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business and Leadership		
Choose three of the following courses:		
INAG102	Agricultural Entrepreneurship	
INAG103	Agricultural Marketing	
INAG131	Introduction to Agricultural Policy and Communication	
INAG132	Agricultural Leadership and Teamwork	
INAG201	Agricultural Human Resources Management	

INAG203	Agricultural Finance	
INAG204	Agricultural Business Management	
INAG206	Agricultural Business Law	
Restricted Electives ¹		17
Student will choose at least 17 credits of advisor-approved electives.		
Total Credits		60

¹ Other courses relevant to the student's course of study may be substituted with advisor approval.

Landscape Management

Course	Title	Credits
Fundamental Studies		
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science or PLSC110/11 Introduction to Horticulture	4
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
LARC160	Introduction to Landscape Architecture and Environmental Design	3
PLSC205	Introduction to Turf Science and Management	4
INAG226	Diseases of Ornamentals and Turf	3
INAG231	Insects of Ornamentals and Turf	3
INAG244	Herbaceous Plants	3
PLSC272	Principles of Arboriculture	3
PLSC253	Woody Plants for Mid-Atlantic Landscapes I	3
INAG250	Fundamentals of Agricultural Mechanics	3
INAG251	Landscape Construction	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business Management		
INAG201	Agricultural Human Resources Management	3
INAG204	Agricultural Business Management	3
INAG206	Agricultural Business Law	3
Electives		
Student will choose 1 or more credits of electives to complete 60 credits of coursework.		1
Total Credits		60

Ornamental Horticulture

Course	Title	Credits
Fundamental Studies		
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
Fundamental Agricultural Science		

INAG100	Introduction to Plant Science or PLSC110/11 Introduction to Horticulture	4
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
INAG224	Greenhouse and Plant Production Management	3
INAG226	Diseases of Ornamentals and Turf	3
INAG231	Insects of Ornamentals and Turf	3
INAG250	Fundamentals of Agricultural Mechanics	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
PLSC253	Woody Plants for Mid-Atlantic Landscapes I	3
Business Management		
INAG102	Agricultural Entrepreneurship	3
INAG201	Agricultural Human Resources Management	3
INAG204	Agricultural Business Management	3
INAG206	Agricultural Business Law	3
Electives		
Student will choose 11 credits of advisor-approved electives to total 60 credits for the certificate.		11
Total Credits		60

Golf Course Management

Course	Title	Credits
Fundamental Studies		
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science	4
PLSC205	Introduction to Turf Science and Management	4
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
INAG207	Power and Machinery	3
INAG214	Agronomic Principles of Golf Turf Management	3
INAG226	Diseases of Ornamentals and Turf	3
INAG231	Insects of Ornamentals and Turf	3
INAG235	Irrigation and Drainage	3
INAG237	GPS & Drone Applications in Surveying	3
INAG250	Fundamentals of Agricultural Mechanics	3
INAG242	Golf Course Design and Construction or PLSC253 Woody Plants for Mid-Atlantic Landscapes I	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business Management		
INAG201	Agricultural Human Resources Management	3
INAG206	Agricultural Business Law	3
INAG215	Business Management Principles for Turf Facilities	3
Electives		

Student will choose at least 1 credit of electives to complete 60 credits of coursework.	1
Total Credits	60

Sports Turf Management

Course	Title	Credits
Fundamental Studies		
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science	4
PLSC205	Introduction to Turf Science and Management	4
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
INAG207	Power and Machinery	3
INAG214	Agronomic Principles of Golf Turf Management	3
INAG226	Diseases of Ornamentals and Turf	3
INAG231	Insects of Ornamentals and Turf	3
INAG235	Irrigation and Drainage	3
INAG237	GPS & Drone Applications in Surveying	3
INAG250	Fundamentals of Agricultural Mechanics	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business Management		
INAG102	Agricultural Entrepreneurship	3
INAG201	Agricultural Human Resources Management	3
INAG206	Agricultural Business Law	3
INAG215	Business Management Principles for Turf Facilities	3
Electives		
Student will choose at least 1 credits of advisor-approved electives to reach 60 credit hours for the certificate.		1
Total Credits		60

General Turfgrass Management

Course	Title	Credits
Fundamental Studies		
ENGL101	Academic Writing	3
INAG110	Oral Communication	3
MATH113	College Algebra and Trigonometry (Or INAG 104, Agricultural Mathematics, or other math course)	3
Fundamental Agricultural Science		
INAG100	Introduction to Plant Science	4
PLSC205	Introduction to Turf Science and Management	4
Applied Agriculture		
INAG105	Soils and Fertilizers	3
INAG106	Pesticide Use and Safety	2
INAG207	Power and Machinery	3
INAG235	Irrigation and Drainage	3
INAG237	GPS & Drone Applications in Surveying	3

INAG250	Fundamentals of Agricultural Mechanics	3
INAG288	Internship	1
INAG289	Internship Experience & Professional Development	3
Business Management		
INAG102	Agricultural Entrepreneurship	3
INAG201	Agricultural Human Resources Management	3
INAG204	Agricultural Business Management	3
INAG206	Agricultural Business Law	3
Electives		
Student will choose 10 credits of advisor-approved electives to reach 60 credits for the certificate.		10
Total Credits		60