

APPLIED AGRICULTURE CERTIFICATE

College of Agriculture and Natural Resources

Institute of Applied Agriculture

3300 Symons Hall

Phone: 301-405-4685

iaa-request@umd.edu

<http://iaa.umd.edu>

Director: Heather McHale

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 and leadership (courses selected for each track from a list that includes agricultural entrepreneurship, marketing, human resources management, finance, business management, alternative enterprises, business law, leadership and communication, public relations, and agricultural policy).

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 INAG104, Quantitative Applications in Agriculture, 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 | |
| | or NFSC112 Food: Science and Technology | |
| Applied Agriculture | | |
| INAG105 | Soils and Fertilizers | 3 |
| INAG106 | Pesticide Use and Safety | 2 |
| INAG250 | Fundamentals of Agricultural Mechanics | 4 |
| 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.

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 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 or NFSC112 Food: Science and Technology | 4 |
| 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 |
| Restricted communication elective 3 | | |
| INAG253 | Agricultural Strategic Communication | |
| JOUR282 | Beyond Facebook: How Social Media are Transforming Society, Culture, Business and Politics | |
| JOUR175 | Media Literacy (JOUR289i: Information 3.0) | |
| JOUR289 | ((JOUR289i: Information 3.0)) | |
| ENGL282 | How Rhetoric Works: Persuasive Power and Strategies | |
| ENGL293 | Digital Writing and Content Creation | |
| ENGL294 | Persuasion through Social Media | |
| Applied Agriculture Electives | | |

Student will choose 16-17 credits of advisor-approved electives to complete their 60 credits.

Total Credits 60

Sustainable FOOD SYSTEMS

| 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 or PLSC112/11 Introductory Crop Science or ANSC101 Principles of Animal Science & ANSC103 and Principles of Animal Science Laboratory or NFSC100 Elements of Nutrition or NFSC112 Food: Science and Technology | 4 |
| 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 | 2 |
| INAG250 | Fundamentals of Agricultural Mechanics | 4 |
| INAG288 | Internship | 1 |
| INAG289 | Internship Experience & Professional Development | 3 |
| Business and Leadership 9 | | |
| Choose three from the following list. | | |
| INAG102 | Agricultural Entrepreneurship | |
| INAG103 | Agricultural Marketing | |
| INAG131 | Introduction to Agricultural Policy and Communication | |
| INAG132 | Agricultural Leadership and Teamwork | |
| INAG205 | Analyzing Alternative Enterprises | |
| INAG201 | Agricultural Human Resources Management | |
| INAG203 | Agricultural Finance | |
| INAG204 | Agricultural Business Management | |
| INAG206 | Agricultural Business Law | |
| INAG252 | Agricultural Public Relations | |
| INAG253 | Agricultural Strategic Communication | |
| Restricted Electives 9 | | |
| Choose three from the following list. Additional business/leadership courses are also acceptable as restricted electives. Others may be accepted with advisor permission. Courses may not be counted both as business/leadership courses and restricted electives. | | |
| INAG207 | Power and Machinery | |
| INAG213 | Crop Production Practices | |
| INAG224 | Greenhouse and Plant Production Management | |
| INAG235 | Irrigation and Drainage | |
| INAG237 | GPS & Drone Applications in Surveying | |
| Electives | | 11 |

Student will choose 11 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.

Total Credits 60

Environmental Stewardship

| Course | Title | Credits |
|--------|-------|---------|
|--------|-------|---------|

Fundamental Studies

| | | |
|---------|---|---|
| INAG110 | Oral Communication | 3 |
| MATH113 | College Algebra and Trigonometry (or INAG104, Quantitative Applications in Agriculture, or other math course) | 3 |
| 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 | 4 |
| INAG272 | Principles of Arboriculture | 3 |
| INAG288 | Internship | 1 |
| INAG289 | Internship Experience & Professional Development | 3 |

Business and Leadership 9

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 | |

Applied Agriculture Electives 16

Student will choose at least 16 credits of advisor-approved electives.

Total Credits 60

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 | 4 |
| 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 |

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 | 4 |
| 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 |

Applied Agriculture Electives

Student will choose 10 credits of advisor-approved electives to total 60 credits for the certificate.

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 | 4 |
| 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 |
| INAG250 | Fundamentals of Agricultural Mechanics | 4 |
| INAG242 | Golf Course Design and Construction | 3 |
| or PLSC253 | Woody Plants for Mid-Atlantic Landscapes I | |
| 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 |
| Elective | | 2 |
| 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 | 4 |
| 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 |
| INAG250 | Fundamentals of Agricultural Mechanics | 4 |
| 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 |
| Elective | | 2 |
| 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 | 4 |
| INAG235 | Irrigation and Drainage | 3 |
| INAG237 | GPS & Drone Applications in Surveying | 3 |
| INAG250 | Fundamentals of Agricultural Mechanics | 4 |
| 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 | | 8 |
| Student will choose 8 credits of advisor-approved electives to reach 60 credits for the certificate. | | |
| Total Credits | | 60 |