

TURFGRASS SCIENCE AND MANAGEMENT - BACHELOR OF SCIENCE IN AGRICULTURE

Turfgrass managers help build, maintain, and manage golf courses, athletic fields, parks, and other recreational areas. The curriculum of each option allows you to focus on a specific segment of the turfgrass industry. All majors are required to pursue two internships with a golf course, parks department, athletic field, lawn care operator or other acceptable turfgrass segment. A grade of C- or above in all Core & Option credits is required.

Option: Athletic Field

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
<i>Area I: Communications</i>		10
English Composition Level 1 ¹		
English Composition Level 2 ¹		
Oral Communications ¹		
<i>Area II: Mathematics</i>		
MATH 1220G	College Algebra ²	3
	or MATH 1430G Applications of Calculus I	
<i>Area III/IV: Laboratory Science and Social/Behavioral Sciences</i>		11
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
Area IV: Social & Behavioral Sciences Course (3 credits) ¹		
<i>Area V: Humanities</i> ¹		3
<i>Area VI: Creative and Fine Arts</i> ¹		3
<i>General Education Elective</i>		
BIOL 2110G	Principles of Biology: Cellular and Molecular Biology	3
Viewing A Wide World ³		6
Two courses from separate colleges, from VWV list (designated 'V'). One of the two must be in a college other than your own. Both courses must be outside your major department (including cross listed courses).		
Departmental/College Requirements		
<i>Core Requirements I</i>		
EPWS 311	Introduction to Weed Science	4
EPWS 314	Plant Physiology	3
HORT 377	Introduction to Turfgrass Management	4
HORT 378	Turfgrass Science	4
HORT 391	Internship (two internships)	1-6
HORT 447	Seminar	1
HORT 479	Advanced Turfgrass Science	3
SOIL 2110	Introduction to Soil Science	3

<i>Core Requirements II</i>		
Select 27 credits from the following:		27
CHEM 2115	Survey of Organic Chemistry and Laboratory	
EPWS 303	Economic Entomology	
EPWS 310	Plant Pathology	
HORT 1115G	Introductory Plant Science	
HORT 2110	Ornamental Plants I	
HORT 2120	Ornamental Plants II	
HORT 300	Special Topics	
HORT 307	Landscape Design	
HORT 365	Principles of Crop Production	
HORT 450	Special Topics	
HORT 462	Plant Breeding	
HORT 471	Plant Mineral Nutrition	
HORT 492	Diagnosing Plant Disorders	
SOIL 2110 & 2110L	Introduction to Soil Science and Introduction to Soil Science Laboratory	
SOIL 312	Soil Management and Fertility	
SOIL 312 L	Soil Management and Fertility Lab	
SOIL 424	Soil Chemistry	
SOIL 456	Irrigation and Drainage	
SOIL 476	Soil Microbiology	
SOIL 476 L	Soil Microbiology Laboratory	
SOIL 477	Environmental Soil Physics	
SOIL 477 L	Environmental Soil Physics Laboratory	
SPAN 2120	Spanish IV	
<i>Athletic Field Option Coursework</i>		
Choose ten credits from the following:		10
AEEC 2110	Principles of Food and Agribusiness Management	
BLAW 313	Sports and the Law	
ECON 337V	Natural Resource Economics	
ECON 384V	Water Resource Economics	
BFIN 2110	Introduction to Finance	
	or BFIN 341 Financial Analysis and Markets	
MGMT 309	Human Behavior in Organizations	
MGMT 332	Human Resources Management	
SPAN 2120	Spanish IV	
Choose six credits from the following:		6
AXED 303	Small Engine Technology	
HORT 300	Special Topics	
PHED 1290	Team Sport:	
Second Language: (not required)		
Electives, to bring the total credits to 120 ⁴		10-15
Total Credits		120
¹ See the General Education section of the catalog for a full list of courses ² MATH 1220G College Algebra or MATH 1430G Applications of Calculus I is required for the degree but students may need to take any prerequisites needed to enter MATH 1220G or MATH 1430G first. ³ See the Viewing a Wider World Section of the catalog for a full list of courses.		

⁴ Elective credit may vary based on prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However, students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.

Option: Golf Course

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
<i>Area I: Communications</i>		10
English Composition Level 1 ¹		
English Composition Level 2 ¹		
Oral Communications ¹		
<i>Area II: Mathematics</i>		
MATH 1220G	College Algebra ²	3
or MATH 1430G	Applications of Calculus I	
<i>Area III/IV: Laboratory Science and Social/Behavioral Sciences</i>		11
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
<i>Area IV: Social & Behavioral Sciences Course (3 credits) ¹</i>		
<i>Area V: Humanities ¹</i>		3
<i>Area VI: Creative and Fine Arts ¹</i>		3
<i>General Education Elective</i>		
BIOL 2110G	Principles of Biology: Cellular and Molecular Biology	3
Viewing A Wide World ³		6
Two courses from separate colleges, from VWW list (designated 'V'). One of the two must be in a college other than your own. Both courses must be outside your major department (including cross listed courses).		
Departmental/College Requirements		
<i>Core Requirements I</i>		
EPWS 311	Introduction to Weed Science	4
EPWS 314	Plant Physiology	3
HORT 377	Introduction to Turfgrass Management	4
HORT 378	Turfgrass Science	4
HORT 391	Internship (two internships)	1-6
HORT 447	Seminar	1
HORT 479	Advanced Turfgrass Science	3
SOIL 2110	Introduction to Soil Science	3
<i>Core Requirements II</i>		
Select 27 credits from the following:		27
CHEM 2115	Survey of Organic Chemistry and Laboratory	
EPWS 303	Economic Entomology	
EPWS 310	Plant Pathology	
HORT 1115G	Introductory Plant Science	
HORT 2110	Ornamental Plants I	

HORT 2120	Ornamental Plants II	
HORT 300	Special Topics	
HORT 307	Landscape Design	
HORT 365	Principles of Crop Production	
HORT 450	Special Topics	
HORT 462	Plant Breeding	
HORT 471	Plant Mineral Nutrition	
HORT 492	Diagnosing Plant Disorders	
SOIL 2110 & 2110L	Introduction to Soil Science and Introduction to Soil Science Laboratory	
SOIL 312	Soil Management and Fertility	
SOIL 312 L	Soil Management and Fertility Lab	
SOIL 424	Soil Chemistry	
SOIL 456	Irrigation and Drainage	
SOIL 476	Soil Microbiology	
SOIL 476 L	Soil Microbiology Laboratory	
SOIL 477	Environmental Soil Physics	
SOIL 477 L	Environmental Soil Physics Laboratory	
SPAN 2120	Spanish IV	
<i>Golf Course Coursework</i>		
Choose two courses from the following:		6
AEEC 2110	Principles of Food and Agribusiness Management	
BLAW 313	Sports and the Law	
ECON 337V	Natural Resource Economics	
ECON 384V	Water Resource Economics	
BFIN 2110	Introduction to Finance	
or BFIN 341	Financial Analysis and Markets	
MGMT 309	Human Behavior in Organizations	
MGMT 332	Human Resources Management	
MKTG 354	Sports Marketing	
Choose six credits from the following:		6
BIOL 2310	Microbiology	
BIOL 311	General Microbiology	
BIOL 312	Plant Taxonomy	
BIOL 313	Structure and Function of Plants	
CHEM 2115	Survey of Organic Chemistry and Laboratory	
EPWS 303	Economic Entomology	
EPWS 310	Plant Pathology	
EPWS 455	Advanced Integrated Pest Management	
Choose three credits from the following:		3
AXED 303	Small Engine Technology	
HORT 300	Special Topics	
Second Language: (not required)		
Electives, to bring the total credits to 120 ⁴		11-16
Total Credits		120
¹	See the General Education section of the catalog for a full list of courses	
²	MATH 1220G College Algebra or MATH 1430G Applications of Calculus I is required for the degree but students may need to take any prerequisites needed to enter MATH 1220G or MATH 1430G first.	
³	See the Viewing a Wider World Section of the catalog for a full list of courses.	

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Option: Turfgrass Business

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

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General Education		
<i>Area I: Communications</i>		10
<i>English Composition Level 1</i> ¹		
<i>English Composition Level 2</i> ¹		
<i>Oral Communications</i> ¹		
<i>Area II: Mathematics</i>		
MATH 1220G	College Algebra ²	3
or MATH 1430G	Applications of Calculus I	
<i>Area III/IV: Laboratory Science and Social/Behavioral Sciences</i>		11
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
<i>Area IV: Social & Behavioral Sciences Course (3 credits)</i> ¹		
<i>Area V: Humanities</i> ¹		3
<i>Area VI: Creative and Fine Arts</i> ¹		3
<i>General Education Elective</i>		
BIOL 2110G	Principles of Biology: Cellular and Molecular Biology	3
Viewing A Wide World ³		6
Two courses from separate colleges, from VWW list (designated "V"). One of the two must be in a college other than your own. Both courses must be outside your major department (including cross listed courses).		
Departmental/College Requirements		
<i>Core Requirements I</i>		
EPWS 311	Introduction to Weed Science	4
EPWS 314	Plant Physiology	3
HORT 377	Introduction to Turfgrass Management	4
HORT 378	Turfgrass Science	4
HORT 391	Internship (two internships)	1-6
HORT 447	Seminar	1
HORT 479	Advanced Turfgrass Science	3
SOIL 2110	Introduction to Soil Science	3
<i>Core Requirements II</i>		
Select 27 credits from the following:		27
CHEM 2115	Survey of Organic Chemistry and Laboratory	
EPWS 303	Economic Entomology	
EPWS 310	Plant Pathology	
HORT 1115G	Introductory Plant Science	
HORT 2110	Ornamental Plants I	

HORT 2120	Ornamental Plants II	
HORT 300	Special Topics	
HORT 307	Landscape Design	
HORT 365	Principles of Crop Production	
HORT 450	Special Topics	
HORT 462	Plant Breeding	
HORT 471	Plant Mineral Nutrition	
HORT 492	Diagnosing Plant Disorders	
SOIL 2110 & 2110L	Introduction to Soil Science and Introduction to Soil Science Laboratory	
SOIL 312	Soil Management and Fertility	
SOIL 312 L	Soil Management and Fertility Lab	
SOIL 424	Soil Chemistry	
SOIL 456	Irrigation and Drainage	
SOIL 476	Soil Microbiology	
SOIL 476 L	Soil Microbiology Laboratory	
SOIL 477	Environmental Soil Physics	
SOIL 477 L	Environmental Soil Physics Laboratory	
SPAN 2120	Spanish IV	
<i>Turfgrass Business Coursework</i>		
Choose two courses from the following:		6
MGMT 309	Human Behavior in Organizations	
MGMT 332	Human Resources Management	
MGMT 333	Training and Development	
SPAN 2120	Spanish IV	
Choose one course from the following:		3
ACCT 200	A Survey of Accounting	
AEEC 2110	Principles of Food and Agribusiness Management	
BLAW 313	Sports and the Law	
ECON 337V	Natural Resource Economics	
ECON 384V	Water Resource Economics	
BFIN 2110	Introduction to Finance	
or BFIN 341	Financial Analysis and Markets	
MGMT 351	Supply Chain Management	
MKTG 2110	Principles of Marketing	
or MKTG 303	Principles of Marketing	
Choose six credits from the following:		6
AXED 303	Small Engine Technology	
CHEM 2115	Survey of Organic Chemistry and Laboratory	
EPWS 303	Economic Entomology	
EPWS 310	Plant Pathology	
EPWS 455	Advanced Integrated Pest Management	
HORT 300	Special Topics	
Second Language: (not required)		
Electives, to bring the total credits to 120 ⁴		11-16
Total Credits		120

¹ See the [General Education](#) section of the catalog for a full list of courses

² MATH 1220G College Algebra or MATH 1430G Applications of Calculus I is required for the degree but students may need to take any prerequisites needed to enter MATH 1220G or MATH 1430G first.

³ See the [Viewing a Wider World](#) Section of the catalog for a full list of courses.

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Option: Turfgrass Science

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<i>Area I: Communications</i>		10
English Composition Level 1 ¹		
English Composition Level 2 ¹		
Oral Communications ¹		
<i>Area II: Mathematics</i>		
MATH 1220G	College Algebra ²	3
or MATH 1430G	Applications of Calculus I	
<i>Area III/IV: Laboratory Science and Social/Behavioral Sciences</i>		11
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
<i>Area IV: Social & Behavioral Sciences Course (3 credits) ¹</i>		
<i>Area V: Humanities ¹</i>		3
<i>Area VI: Creative and Fine Arts ¹</i>		3
<i>General Education Elective</i>		
BIOL 2110G	Principles of Biology: Cellular and Molecular Biology	3
Viewing A Wide World ³		6
Two courses from separate colleges, from VWW list (designated "V"). One of the two must be in a college other than your own. Both courses must be outside your major department (including cross listed courses).		
Departmental/College Requirements		
<i>Core Requirements I</i>		
EPWS 311	Introduction to Weed Science	4
EPWS 314	Plant Physiology	3
HORT 377	Introduction to Turfgrass Management	4
HORT 378	Turfgrass Science	4
HORT 391	Internship (two internships)	1-6
HORT 447	Seminar	1
HORT 479	Advanced Turfgrass Science	3
SOIL 2110	Introduction to Soil Science	3
<i>Core Requirements II</i>		
Select 27 credits from the following:		27
CHEM 2115	Survey of Organic Chemistry and Laboratory	
EPWS 303	Economic Entomology	
EPWS 310	Plant Pathology	
HORT 1115G	Introductory Plant Science	
HORT 2110	Ornamental Plants I	

HORT 2120	Ornamental Plants II
HORT 300	Special Topics
HORT 307	Landscape Design
HORT 365	Principles of Crop Production
HORT 450	Special Topics
HORT 462	Plant Breeding
HORT 471	Plant Mineral Nutrition
HORT 492	Diagnosing Plant Disorders
SOIL 2110 & 2110L	Introduction to Soil Science and Introduction to Soil Science Laboratory
SOIL 312	Soil Management and Fertility
SOIL 312 L	Soil Management and Fertility Lab
SOIL 424	Soil Chemistry
SOIL 456	Irrigation and Drainage
SOIL 476	Soil Microbiology
SOIL 476 L	Soil Microbiology Laboratory
SOIL 477	Environmental Soil Physics
SOIL 477 L	Environmental Soil Physics Laboratory
SPAN 2120	Spanish IV

Turfgrass Science Coursework

Choose six credits from the following:		6
A ST 311	Statistical Applications	
BCHE 341	Survey of Biochemistry	
BCHE 395	Biochemistry I	
BIOL 2310	Microbiology	
BIOL 311	General Microbiology	
BIOL 313	Structure and Function of Plants	
CHEM 2115	Survey of Organic Chemistry and Laboratory	
Choose six credits from the following:		6
EPWS 303	Economic Entomology	
EPWS 310	Plant Pathology	
EPWS 420	Environmental Behavior of Pesticides	
EPWS 455	Advanced Integrated Pest Management	
ECON 384V	Water Resource Economics	
Choose six credits from the following:		6
AXED 303	Small Engine Technology	
BFIN 2110	Introduction to Finance	
BFIN 341	Financial Analysis and Markets	
BLAW 313	Sports and the Law	
ECON 337V	Natural Resource Economics	
HORT 300	Special Topics	
MGMT 309	Human Behavior in Organizations	
MGMT 332	Human Resources Management	
MGMT 351	Supply Chain Management	
MKTG 354	Sports Marketing	

Second Language: (not required)

Electives, to bring the total credits to 120 ⁴	8-13
Total Credits	120

¹ See the [General Education](#) section of the catalog for a full list of courses

² MATH 1220G College Algebra or MATH 1430G Applications of Calculus I is required for the degree but students may need to take any prerequisites needed to enter MATH 1220G or MATH 1430G first.

³ See the [Viewing a Wider World](#) Section of the catalog for a full list of courses.

⁴ Elective credit may vary based on prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However, students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.

Option: Athletic Field

A Suggested Plan of Study for Students

For a suggested plan of study for this option please speak to your advisor.

Option: Golf Course

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1220G College Algebra and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

Course	Title	Credits
First Year		
Semester 1		
MATH 1220G	College Algebra (C- or better) ¹	3
ENGL 1110G	Composition I (C- or better) ¹	4
HORT 1115G	Introductory Plant Science (C- or better)	4
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors (C- or better) ¹	4
ACES 1120	Freshman Orientation (C- or better)	1
ACES 1210	Financial Fitness for College Students (C- or better)	1
Credits		17
Semester 2		
AXED 2120G	Effective Leadership and Communication in Agriculture (C- or better)	3
BIOL 2110G & BIOL 2110L	Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory (C- or better)	4
ENGL 2210G	Professional & Technical Communication (C- or better) ¹	3
Area IV: Social and Behavioral Science Course ²		3
Area V: Humanities Course (C- or better) ²		3
Credits		16
Second Year		
Semester 1		
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors (C- or better) ¹	4
HORT 2110	Ornamental Plants I (C- or better)	4
EPWS 311	Introduction to Weed Science (C- or better) ¹	4
Area IV: Social and Behavioral Science Course (C- or better) ²		3
Credits		15
Semester 2		
EPWS 314	Plant Physiology (C- or better) ¹	3
HORT 2160	Plant Propagation (C- or better)	3

SOIL 2110	Introduction to Soil Science (C- or better) ¹	3
Turfgrass Option Elective Course (C- or better)		3
Turfgrass Core Elective Course (C- or better)		3
Credits		15
Third Year		
Semester 1		
HORT 2120	Ornamental Plants II (C- or better)	4
HORT 377	Introduction to Turfgrass Management (C- or better) ¹	4
HORT 391	Internship (C- or better)	3
SOIL 424	Soil Chemistry (C- or better) ¹	3
VWW: Viewing a Wider World Course (C- or better) ³		3
Credits		17
Semester 2		
AXED 303	Small Engine Technology (C- or better)	3
EPWS 303	Economic Entomology (C- or better) ¹	3
HORT 378	Turfgrass Science (C- or better) ¹	4
HORT 471	Plant Mineral Nutrition (C- or better) ¹	3
SOIL 312 & 312 L	Soil Management and Fertility and Soil Management and Fertility Lab (C- or better) ¹	4
Credits		17
Fourth Year		
Semester 1		
ECON 337V	Natural Resource Economics (C- or better) ¹	3
EPWS 310	Plant Pathology (C- or better) ¹	4
HORT 307	Landscape Design (C- or better) ¹	3
HORT 391	Internship (C- or better)	3
Viewing a Wider World (C- or better)		3
Credits		16
Semester 2		
HORT 479	Advanced Turfgrass Science (C- or better) ¹	3
HORT 447	Seminar (C- or better)	1
SOIL 456	Irrigation and Drainage (C- or better)	3
Credits		7
Total Credits		120

¹ These courses have prerequisites and it is the students responsibility to check and fulfill all course prerequisites listed for these courses.

² See the [General Education](#) section of the catalog for a full list of courses.

³ See the [Viewing a Wider World](#) section of the catalog for a full list of courses.

Option: Turfgrass Business

A Suggested Plan of Study for Students

For a suggested plan of study for this option please speak to your advisor.

Option: Turfgrass Science

A Suggested Plan of Study for Students

For a suggested plan of study for this option please speak to your advisor.