

Date Submitted: 03/01/18 3:05 pm

# Viewing: **HLTSBS : Horticulture, Landscape, and Turf Sciences, Bachelor of Science in Agri Food & Life Sciences**

Last approved: 04/06/15 10:39 am

Last edit: 10/11/18 4:02 pm

Changes proposed by: ckuhns

Catalog Pages Using  
this Program

[Horticulture \(HORT\)](#)

Submitter: User ID: crsleaf1 Phone:  
575-6731

Program Status Active

Academic Level Undergraduate

Type of proposal Major/Field of Study

Select a reason for this modification

Making Minor Changes to an Existing Degree (e.g. changing 15 or fewer hours, changing admission/graduation requirements, adding Focused Study)

Are you adding a concentration?

No

Are you adding a track?

No

Are you adding a focused study?

No

Effective Catalog Year Fall 2019

College/School Code

Bumpers College of Agricultural, Food, and Life Sciences(AFLS)

## In Workflow

1. **AFLS Dean Initial**
2. **Director of Program Assessment and Review**
3. **Registrar Initial**
4. **HORT Chair**
5. **HORT Curriculum Committee**
6. **AFLS Faculty**
7. **AFLS Dean**
8. **Global Campus**
9. **Provost Review**
10. **University Course and Program Committee**
11. **Faculty Senate**
12. **Provost Final**
13. **Provost's Office-- Notification of Approval**
14. **Registrar Final**
15. **Catalog Editor Final**

## Approval Path

1. 02/28/18 8:36 am  
Lona Robertson (ljrobert): Approved for AFLS Dean Initial
2. 02/28/18 8:48 am  
Terry Martin (tmartin): Approved for Provost Initial
3. 03/01/18 1:40 pm  
Alice Griffin (agriffin): Rollback to Initiator

## Department Code

Department of Horticulture(HORT)

## Program Code

HLTSBS

## Degree

Bachelor of Science in Agricultural, Food &amp; Life Sciences

## CIP Code

4. 03/02/18 7:08 am  
Lona Robertson  
(ljrobert): Approved  
for AFLS Dean Initial
5. 03/05/18 3:15 pm  
Alice Griffin  
(agriffin): Approved  
for Director of  
Program  
Assessment and  
Review
6. 06/25/18 1:50 pm  
Lisa Kulczak  
(lkulcza): Approved  
for Registrar Initial
7. 06/26/18 9:29 am  
Wayne Mackay  
(mackay): Approved  
for HORT Chair
8. 09/20/18 2:12 pm  
Jefferson Miller  
(jdmiller): Approved  
for HORT  
Curriculum  
Committee
9. 09/24/18 11:48 am  
Douglas Karcher  
(karcher): Approved  
for AFLS Faculty
10. 09/24/18 1:18 pm  
Lona Robertson  
(ljrobert): Approved  
for AFLS Dean
11. 09/24/18 4:55 pm  
Miran Kang (kang):  
Approved for Global  
Campus
12. 10/08/18 8:08 am  
Terry Martin

(tmartin): Approved  
for Provost Review  
13. 10/29/18 10:44 am  
Alice Griffin  
(agriffin): Approved  
for University  
Course and Program  
Committee

### History

1. Aug 15, 2014 by  
Leepfrog  
Administrator  
(clhelp)
2. Apr 6, 2015 by  
Charlie Alison  
(calison)

01.0603 - Ornamental Horticulture.

#### Program Title

Horticulture, Landscape, and Turf Sciences, Bachelor of Science in Agri Food & Life Sciences

#### Program Delivery

##### Method

On Campus

Is this program interdisciplinary?

No

Does this proposal impact any courses from another College/School?

**No**

What are the total  
hours needed to  
complete the  
program? **120**

## Program Requirements and Description

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### Requirements

# Requirements for a Major in Horticulture, Landscape and Turf Sciences (HLTS)

The HLTS major will consist of 120 hours to include the following:

State minimum core and discipline specific general education requirements:

(Course work that meets state minimum core requirements is in **bold**.)

Communications		6
<del>Two English Core Courses (unless exempt)</del>		
<u>ENGL 1013</u>	Composition I (ACTS Equivalency = ENGL 1013)	
<u>ENGL 1023</u>	Composition II (ACTS Equivalency = ENGL 1023)	
U.S. History and Government		3
<u>HIST 2003</u>	History of the American People to 1877 (ACTS Equivalency = HIST 2113)	
<u>HIST 2013</u>	History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)	
<u>PLSC 2003</u>	American National Government (ACTS Equivalency = PLSC 2003)	
<del>Mathematics (3 hours)</del>		<del>3</del>
<b>Mathematics</b>		<b>3-4</b>
<u>MATH 1203</u>	College Algebra (ACTS Equivalency = MATH 1103) (or higher level math)	
<del>Sciences (16-20 hours)</del>		<del>16-20</del>
<b>Physical and Biological Sciences</b>		<b>12-16</b>
<u>BIOL 1543</u>	Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)	
& <u>BIOL 1541L</u>	and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	
<del>BIOL 1613</del>	<del>Plant Biology (ACTS Equivalency = BIOL 1034 Lecture)</del>	
& <del>BIOL 1611L</del>	<del>and Plant Biology Laboratory (ACTS Equivalency = BIOL 1034 Lab)</del>	
<u>CHEM 2613</u>	Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture)	
& <u>CHEM 2611L</u>	and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)	
<b>Select from one Chemistry group:</b>		
<u>CHEM 1073</u>	Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture)	
& <u>CHEM 1071L</u>	and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)	
OR		
<u>CHEM 1103</u>	<b>University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)</b>	
& <u>CHEM 1101L</u>	<b>and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)</b>	
AND		
<u>CHEM 1123</u>	<b>University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture)</b>	
& <u>CHEM 1121L</u>	<b>and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)</b>	
Fine Arts and Humanities (6 hours)		6-8
<b>Fine Arts Core Course (Select at least 3 hours from Fine Arts University Core)</b>		

**Humanities Core Course (Select at least 3 hours from Humanities University Core)**

## Social Sciences

9

Select 9 hours from Social Science University Core including at least one of the following:

AGEC 1103 Principles of Agricultural Microeconomics

~~HLTS Core Requirements (26-28 hours)~~~~27-~~~~28~~

**AGEC 2103 Principles of Agricultural Macroeconomics**

**ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)**

**ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)**

**ECON 2143 Basic Economics: Theory and Practice**

**HLTS Core Requirements****30-****31**

UNIV 1001 University Perspectives

COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)

Communication Intensive Elective (3 hours - see advisor for approved list of courses)

CSES 2203 Soil Science

& CSES 2201L and Soil Science Laboratory

HORT 2003 Principles of Horticulture (with lab component)

~~HORT 3901 Horticultural Career Development~~

**HORT 2101 Course HORT 2101 Not Found**

HORT 4403 Plant Propagation (with lab component)

HORT 4413 Horticulture Physiology

HORT 462V Horticulture, Landscape, Turf Sciences Internship Experience (1 hour)

**HORT 472V Course HORT 472V Not Found (2 hours)**

Select two of the following:

CSES 4143 Principles of Weed Control

ENTO 3013 Introduction to Entomology

PLPA 3004 Principles of Plant Pathology (with lab component)

## Horticulture Electives

18

Select 18 hours from the following:

**HORT 1303 Introduction to Floral Design**

HORT 2303 Introduction to Turfgrass Management

HORT 3103 Woody Landscape Plants (with lab component)

HORT 3113 Herbaceous and Indoor Plant Materials (with lab component)

HORT 3123 International Horticulture

HORT 3203 Sustainable Landscape Practices

HORT 3303 Vegetable Crops

HORT 3403 Turfgrass Management (with lab component)

HORT 3503 Sustainable and Organic Horticulture

HORT 4033 Professional Landscape Installation and Construction

<a href="#">HORT 4043</a>	Professional Landscape Management	
<a href="#">HORT 4103</a>	Fruit Production Science and Technology (with lab component)	
<a href="#">HORT 4503</a>	Sustainable Nursery Production	
<a href="#">HORT 4603</a>	Practical Landscape Planning	
<a href="#">HORT 4703</a>	Greenhouse Management and Controlled Environment Horticulture	
<a href="#">HORT 4701L</a>	Greenhouse Management and Controlled Environment Horticulture Laboratory	
<a href="#">HORT 4803</a>	Greenhouse Crops Production	
<a href="#">HORT 4801L</a>	Greenhouse Crops Production Laboratory	
<a href="#">HORT 4903</a>	Golf and Sports Turf Management (with lab component)	
<a href="#">HORT 4913</a>	Rootzone Management for Golf and Sports Turf	
<a href="#">HORT 4921</a>	Golf Course Operations	
<a href="#">HORT 4932</a>	Turf Best Management Practices	
<a href="#">HORT 400V</a>	Special Problems	
<a href="#">HORT 401V</a>	Special Topics in Horticulture, Turf or Landscape	
Discipline-Related Electives		12-
		13
Select at least 12 hours from the following:		
<del>General Electives (15-26 hours of general electives to total 120 hours)</del>		<del>15-</del>
		<del>26</del>
<a href="#">AGME 3102</a>	Small Power Units/Turf Equipment	
& <a href="#">AGME 3101L</a>	and Small Power Units/Turf Equipment Laboratory	
<a href="#">AGME 3153</a>	Surveying in Agriculture and Forestry	
<a href="#">AGME 4973</a>	Irrigation (with lab component)	
<a href="#">ANSC/POSC 3123</a>	Principles of Genetics	
<a href="#">HORT 1103</a>	Plants, People and You	
<a href="#">HORT 400V</a>	Special Problems	
<a href="#">HORT 401V</a>	Special Topics in Horticulture, Turf or Landscape	
<a href="#">LARC 3914</a>	Planting Design I	
<a href="#">LARC 2113</a>	Design Communications I	
<a href="#">PHYS 1023</a>	Physics and Human Affairs	
& <a href="#">PHYS 1021L</a>	and Physics and Human Affairs Laboratory (or higher level)	
WCOB (up to 9 hours)		
<b>or any AGECE, AGME, BIOL, CHEM, CSES, ENSC, ENTO, FDSC, HORT, PLPA class not taken in any other elective group.</b>		
<b>General Electives</b>		<b>12-</b>
		<b>21</b>
Total Hours		120

8-Semester Plan

**Horticulture, Landscape and Turf Sciences B.S.A.**

## Nine-Semester Degree Plan

Students wishing to follow the degree plan should see the [Eight-Semester Degree Policy](#) for university requirements of the program.

First Year	Units		
	Fall	Spring	Summer
<a href="#">UNIV 1001</a> University Perspectives	1		
<a href="#">MATH 1203</a> College Algebra (ACTS Equivalency = MATH 1103) (or higher level math)	3		
<a href="#">ENGL 1013</a> Composition I (ACTS Equivalency = ENGL 1013)	3		
<del><a href="#">COMM 1313</a> Public Speaking (ACTS Equivalency = SPCH 1003)</del>	<del>3</del>	<del>-</del>	<del>-</del>
<a href="#">BIOL 1543</a> Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & <a href="#">BIOL 1541L</a> Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4		
<b>History Core Elective</b>	<b>3</b>		
<a href="#">ENGL 1023</a> Composition II (ACTS Equivalency = ENGL 1023)		3	
<a href="#">HORT 2003</a> Principles of Horticulture		3	
Fine Arts University Core (Suggest LARC 1003 Basic Course in the Arts: The American Landscape)		3	
<del>History Core Elective</del>	<del>-</del>	<del>3</del>	<del>-</del>
Social Science Core		3	
<b><a href="#">COMM 1313</a> Public Speaking (ACTS Equivalency = SPCH 1003)</b>		<b>3</b>	
Year Total:	14	15	
Second Year	Units		
	Fall	Spring	Summer
<a href="#">CHEM 1073</a> Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) & <a href="#">CHEM 1071L</a> Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)	4		
Communication Intensive Class		3	
Horticulture Electives		6	
<b>Discipline-related Elective</b>	<b>3</b>		
<del><a href="#">BIOL 1613</a> Plant Biology (ACTS Equivalency = BIOL 1034 Lecture) &amp; <a href="#">BIOL 1611L</a> Plant Biology Laboratory (ACTS Equivalency = BIOL 1034 Lab)</del>	<del>-</del>	<del>4</del>	<del>-</del>
<del>Fine Arts/Humanities University Core</del>	<del>-</del>	<del>3</del>	<del>-</del>
<del><a href="#">HORT 3901</a> Horticultural Career Development</del>	<del>-</del>	<del>1</del>	<del>-</del>
<b>Humanities University Core (Suggest PHIL 2003 Intro to Philosophy)</b>		<b>3-4</b>	
<b><a href="#">HORT 4413</a> Horticulture Physiology</b>		<b>3</b>	
Discipline-related Elective		3	
<b><a href="#">HORT 2101</a> Course HORT 2101 Not Found</b>		<b>1</b>	
General Electives		4	

Year Total:			16	14
Third Year				
			Units	
			Fall	Spring
			Summer	
<a href="#">CSES 2203</a> Soil Science			4	
& <a href="#">CSES 2201L</a> Soil Science Laboratory				
Pest Management Elective			3-4	
Horticulture Elective			3	
Social Sciences University Core Elective			3	
Discipline-Related Elective			3	
<a href="#">CHEM 2613</a> Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture)			4	
& <a href="#">CHEM 2611L</a> Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)				
Discipline-Related Elective			3-4	
<a href="#">HORT 4403</a> Plant Propagation			3	
Horticulture Elective			3	
<a href="#">HORT 462V</a> Horticulture, Landscape, Turf Sciences Internship Experience				1
Year Total:			16	13
				1
Fourth Year				
			Units	
			Fall	Spring
			Summer	
<del>Discipline-Related Elective</del>			<del>3</del>	<del>-</del>
Horticulture Elective			3	
<a href="#">HORT 472V</a> <a href="#">Course HORT 472V Not Found</a>			2	
Pest Management Elective			3-4	
General Electives			1-9	
Social Science University Core Elective			3	
Horticulture Elective			3	
General Electives			7-8	
Year Total:			17	14
Total Units in Sequence:				120

Are Similar Programs available in the area?

No

Estimated Student Demand for Program NA

Demand for Program

Scheduled Program **2020-2021** NA

Review Date



## Program Goals and Objectives

### Program Goals and Objectives

The goal of the Department of Horticulture is to serve the people of Arkansas and assist the nation and the world through education, research, and service. Through dedicated teaching, pursuit of knowledge and interaction with society, we seek to improve our contributions to the general welfare. The Department of Horticulture has, as perhaps no other department, a goal to create quality of life for all citizens--economic, aesthetic and social wellbeing by educating students in horticultural and turfgrass sciences, conducting research that makes a difference, and to communicate those findings to industry and the public. ~~NA~~

## Learning Outcomes

### Learning Outcomes

Student Learning Outcomes are defined into General and Discipline Specific Skills as follows.

#### 1) General Skills:

- a) Student Learning Outcome 1: Written Communication Skills - The development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve mixed-media including digital format. Written communication abilities develop through iterative experiences across the curriculum. See Tables 1 and 6.
- b) Student Learning Outcome 2: Oral Communication Skills - Oral communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors. See Tables 2 and 6.
- c) Student Learning Outcome 3: Critical Thinking Skills - The comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion. See Tables 3 and 6.

#### 2) Discipline Specific Skills:

- a) Student Learning Outcome 1: Acquire, integrate, and apply knowledge of plant science to managed systems.
  - i) Goal 1: Develop working knowledge of multiple sources, including current and older literature, to find, evaluate, organize, and manage information related to horticultural systems.
  - ii) Goal 2: Demonstrate competence with both laboratory and field-based technologies used in modern horticulture.
  - iii) Goal 3: Apply concepts of plant biology, systematics, ecology, and genetics to manage and improve plants and their products.
  - iv) Goal 4: Apply scientific methods to test hypothesis.
- b) Learning Outcome 2: Demonstrate interdisciplinary knowledge and competency in managing horticultural system.
  - i) Goal 1: Assess soils, soil health, plant fertility, water, and site limitations.

### Learning Outcomes

- ii) Goal 2: Assess potential and evaluate realized interactions with the abiotic and biotic environment in which plants are grown.
- iii) Goal 3: Recommend and use appropriate application methods, materials, and diagnostic skills for addressing soil constraints and irrigation, nutrient, stress, and pest management issues.
- iv) Goal 4: Apply principles of accounting, business law, labor, marketing and personnel management to a horticultural business and contribute to developing the various components of a business plan.
- c) Learning Outcome 3: Synthesize knowledge and use insight and creativity to better understand and improve plant systems.
- i) Goal 1: Anticipate and recognize problems, identify causes of those problems, identify viable solutions to the problems and evaluate actions and consequences of treatments and interventions.
- ii) Goal 2: Develop, identify and employ best management practices that lead to sustainable solutions and outcomes.
- iii) Goal 3: Understand how global issues including climate change, energy use, water availability, and/or food safety impact on sustainability of horticultural systems locally, regionally and globally.
- d) Learning Outcome 4: Appreciate and communicate the diverse impacts of horticulture on people.
- i) Goal 1: Describe the various ways plants impact human well-being (mental: psychological and restorative; and physiological).
- ii) Goal 2: Describe and assess the influence of plants and their management on environmental sustainability habitat restoration or low-impact development.
- iii) Goal 3: Quantify the economic importance of plants in managed ecosystems and the impact of horticultural crops in food system.
- iv) Goal 4: Describe the social, spiritual and cultural importance of plants to historical and contemporary communities of people.
- v) Goal 5: Communicate effectively with various audiences using oral, written and visual presentation skills and multi-media techniques.
- e) Learning Outcome 5: Demonstrates professionalism and proficiency in skills that relate to horticulture.
- i) Goal 1: Acquire knowledge of a range of cultures, values, and political perspectives relevant for living in a global community.
- ii) Goal 2: Demonstrate a high level of personal and social responsibility.
- iii) Goal 3: Demonstrate leadership and the ability to collaborate and work in teams.
- iv) Goal 4: Plan, engage and learn from actions that demonstrate civic responsibility to community and society.
- v) Goal 5: Develop a plan for life-long learning as it relates to career choice and professionalism. **NA**

Description and justification of the request

**Description of specific change**

**Justification for this change**

Description of specific change	Justification for this change
<p>Made changes to Internship program by adding HORT 472V (2 hours) and decreasing summer requirement of HORT 462V (1 hour). Moved all online classes from Discipline related electives to Horticulture electives. Changed HORT 3901 Career Development to a 2000 level course (HORT 2101). Removed BIOL 1613 and 1611L from Physical and Biological Sciences Core and added HORT 4413 to Horticulture Core. Added new course HORT 1303 - Intro to Floral Design to Horticulture Electives. Added FDSC to Discipline related Electives.</p>	<p>To be in compliance with University policy on off-campus student enrollment changes made to Internship program for assessment purposes. Faculty voted to accept all on-line courses as part of Horticulture Electives instead of Discipline-related Electives. HORT 3901 re-aligned to lower level to capture incoming students for student learning outcome assessment. Faculty voted to accept HORT 4413 - Horticulture Physiology in lieu of BIOL 1613/1611L as being more relevant to HLTSBS majors. Faculty voted to accept courses in FDSC for Discipline-related electives.</p>

Upload attachments

Reviewer Comments

**Alice Griffin (agriffin) (02/28/18 3:46 pm):** Changed effective date from spring 2019 to fall 2019. UGRD program changes can only occur at the beginning of each catalog year.

**Alice Griffin (agriffin) (02/28/18 4:26 pm):** Edited the credit hours field in the course list in order for the total hours to correctly reflect the 120 credit hours required for the degree program.

**Alice Griffin (agriffin) (03/01/18 9:51 am):** Adjusted general electives in 8/9 SDCP for hours to total 120 hours.

**Alice Griffin (agriffin) (03/01/18 10:59 am):** Adjusted the range of credit hours within the 8/9 SDCP to assist with hours totaling 120 credit hours.

**Alice Griffin (agriffin) (03/01/18 1:40 pm):** Rollback: Please change the reason for the modification to a minor change. Also insert the change of HORT 3901 to HORT 2101 as noted in the description.

**Alice Griffin (agriffin) (03/02/18 8:19 am):** Updated scheduled program review date.

**Alice Griffin (agriffin) (03/05/18 3:15 pm):** Inserted suggested classes for Fine Arts and Humanities as requested by department. Also, changed general electives from 6-9 to 1-9 in the fall of the fourth year so that electives in the 8/9 SDCP match program requirements with permission from submitter.

**Lisa Kulczak (lkulcza) (06/25/18 1:49 pm):** Both HORT courses "not found" currently in approval process for 2019.

**Alice Griffin (agriffin) (10/11/18 3:55 pm):** Cleaned up duplicate parentheses in program requirements.

**Alice Griffin (agriffin) (10/11/18 4:02 pm):** Program goals and student learning outcomes were inserted from department's annual assessment report.

