

**HLTSBS Program Assessment Report  
Horticulture Department  
University of Arkansas  
Academic Year 2019-2020**

**Department of Horticulture**

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**Department Mission**

The mission of the Department of Horticulture at The University of Arkansas is to conduct applied and basic research and support and enhance the Arkansas horticulture industries and to conduct high quality teaching and student research programs leading to B.S., M.S. and Ph.D. degrees in a diverse, equitable, and inclusive environment. Our department head and dedicated faculty and staff have set specific goals for executing our mission.

The mission of the Department of Horticulture is to conduct applied and basic research to support and enhance the Arkansas horticultural industries; and to conduct high quality teaching and student research programs leading to B.S., M.S., and Ph.D. degrees.

**Program Goals**

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 well-being by educating students in horticultural and turfgrass sciences, conducting research that makes a difference, and to communicate those findings to industry and the public.

**Student Learning Outcomes Being Assessed in This Report:**

**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.

**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.

## **Assessment Measures for General Skills:**

### **Student Learning Outcome - Written Communication.**

- (1) Achievement will be assessed using a written communication rubric for laboratory reports and technical/scientific proposals where the student has analyzed, synthesized and evaluated information from independent sources as part of a class project and/or completed an independent research project as part of a special problems, research project or internship class.
- (2) This is a direct measure of student learning.

### **Student Learning Outcome – Oral Communication.**

- (1) Achievement will be assessed using an oral communication rubric during oral presentations where the student has compiled and evaluated the scientific literature as part of a class project and/or completed an independent research project as part of a special problems, research project or internship class. See example at the end of this section.
- (2) This is a direct measure of student learning.

## **Assessment Measures for Discipline Specific Skills: Written Communication**

### **Student Learning Outcome 1: Acquire, integrate, and apply knowledge of plant science to managed systems (Goal 1 was assessed).**

Goal 1: Develop working knowledge of multiple sources, including current and older literature, to find, evaluate, organize, and manage information related to horticultural systems.

Goal 2: Demonstrate competence with both laboratory and field-based technologies used in modern horticulture.

Goal 3: Apply concepts of plant biology, systematics, ecology, and genetics to manage and improve plants and their products.

Goal 4: Apply scientific methods to test hypothesis.

This is a direct measure of student learning.

## **Assessment Measures for Discipline Specific Skills: Oral Communication**

### **Student Learning Outcome 4: Appreciate and communicate the diverse impacts of horticulture on people.**

Goal 1: Describe the various ways plants impact human well-being (mental: psychological and restorative; and physiological).

Goal 2: Describe and assess the influence of plants and their management on environmental sustainability habitat restoration or low-impact development.

Goal 3: Quantify the economic importance of plants in managed ecosystems and the impact of horticultural crops in food system.

**Methodology:**

For this assessment report, two courses were identified with a significant written or oral communication component to the curricula. The aim of this assessment was to target upper classmen who are either at the terminal stage of their degree program, or within a year of completion. Two courses were identified for Discipline Specific Skills: Student Learning Outcome – Written Communication (Outcome 1) and Oral Communication (Outcome 4). The two courses assessed are HORT 462V HLTS Internship Experience Seminar (Dr. Ainong Shi, instructor) and HORT 4403 Plant Propagation (Dr. Garry McDonald, instructor). HORT 462V was chosen as a baseline assessment to begin to gather data as the required internship requirement migrates to the Department's General Education Capstone Course to satisfy General Education Requirement 6.1. Starting the fall 2020 semester, the required internship will be divided in two parts. Part One HORT 462V HLTS Internship Experience and Part Two HORT 472V HLTS Internship Assessment. HORT 472V will be used to satisfy the General Education requirement for a capstone assessment. As part of the General Education requirement, this course will be assessed yearly; hence the need for baseline data to assess the effectiveness of the revised internship requirement.

**Written Communication Components Assessed:**

HORT 4403 Plant Propagation: Students were assigned a term paper on propagating one specific plant species and general cultural care. This written task was to assess the student's ability to acquire, integrate, and apply new knowledge about a specific horticultural crop and convey that new knowledge in a written document. Rough drafts were required and feedback was provided on content and revisions. Based on last year's assessment report and recommendations, the students were provided with a comprehensive grading rubric on expectations. Greater instructional guidance and feedback was provided as well as additional time to revise and edit first drafts. Papers were evaluated and scored using a modified rubric from the previous course iteration and reported as a class average (Table 1).

**Oral Communication Components Assessed:**

HORT 462V HLTS Internship Experience: Students are required to prepare a professional formal seminar based on their internship experience. The expected time duration is about 12 minutes and 3 minutes for questions. Three faculty members were randomly asked to evaluate and score each undergraduate presentation using a grading rubric developed to match the assessment plan criteria (see Table 3). The overall average score was reported (Table 1).

**Acceptable and Ideal Targets for the Discipline Specific Skills:** Student Learning Outcome-Written and Oral Communication.

- (1) Acceptable target: Graduating students must demonstrate skills in the continuum between Milestones 2 and 3 in the student learning outcomes for written communication, oral communications and critical thinking outlined in the rubrics.
- (2) Ideal target: Students will be able to demonstrate skills outlined in the Capstone column for written communication, oral communication and critical thinking.

## Summary of Findings

### Written Communication Assessment:

In general, students performed satisfactory in meeting the student learning outcome acceptable target of 2 or 3 for written communication. Summarized data for HORT 4403 Plant Propagation is given in Table 1. The assessment rubric used to rate the written assignment is given in Table 2. Ratings in the area of sources and evidence were lower than in previous semesters. Also, content development ratings were lower. This is attributed to the semester being interrupted by the Covid-19 pandemic that forced students off campus, and a suspension of normal campus activities and a loss of primary literature resources. This was particularly apparent when students didn't have access to library or instructor resources, and had to rely on internet sites for technical information. In addition, there were fewer opportunities for class interaction and feedback on content. The remote nature of the learning environment also added emotional stress to the students and in some cases, negatively impacted their motivation and mental health which affected the written assignment: as such, three students failed to submit written material for evaluation. This resulted in a score assessment of 0 being assigned to those students.

Notwithstanding the effects of the Covid-19 pandemic, eighty-seven percent of the HORT 4403 Plant Propagation students met the target rating of 2 to 3 on the department assessment plan written communication student learning outcome (see above). As mentioned, the ongoing pandemic impacted the content and quality of the written assignment, but areas for improvement were identified will be included in the recommendation section.

### Oral Communication Assessment:

Students assessed in HORT 462V were all upperclassmen and within one or two semesters from graduation. Summarized data for HORT 462V Internship Experience is given in Table 1. While all students met the Horticulture Department's target rating of 2 to 3 (see above), areas for improvement were identified and will be included under the recommendation section. All student met the acceptable target of milestones 2 and 3.

Table 1. Overall written and oral communication student learning outcome scoring data for the two courses assessed during the 2019-2020 academic year.

Course Assessed	Number of Students Assessed	Overall Average Assessment Score*	Minimum Score Assessed	Maximum Score Assessed
Hort 4403 Plant Propagation	23	2.9	0.0	4.0
Hort 462V Internship Experience	17	3.3	2.0	4.0

\*Average assessment score for all courses is the overall course average based on a rubric rating scale of 0 (does not meet minimum student learning outcome goals for written communication or the student failed to turn in written report for assessment) to 4 (mastery of the student learning outcome goals for written communication).

Table 2. Written communication student learning outcome scoring data based on an evaluation rubric for HORT 4403 Plant Propagation during the 2019-2020 academic year.

Student Learning Outcome	Number of Students Assessed	Average Assessment Score*	Minimum Score Assessed*	Maximum Score Assessed
Context and purpose of writing	23	3.48	0.0	4.0
Content development	23	2.90	0.0	4.0
Genre and disciplinary conventions	23	2.95	0.0	4.0
Sources and evidence	23	2.90	0.0	4.0
Syntax and mechanics	23	3.33	0.0	4.0

\*A 0 score was assigned to three students who failed to turn in written material for assessment.

Table 3. Oral communication student learning outcome scoring data based on an evaluation rubric for HORT 462V Internship Experience during the 2019-2020 academic year.

Student Learning Outcome	Number of Students Assessed	Average Assessment Score*	Minimum Score Assessed	Maximum Score Assessed
Speaker appearance	17	3.83	2.0	4.0
Title of Presentation	17	3.89	3.0	4.0
Introduction and objectives	17	3.72	2.0	4.0
Visual material presented	17	3.77	3.0	4.0
Content	17	3.78	3.0	4.0
Structure and transition	17	3.78	2.0	4.0
Conclusions	17	3.61	2.0	4.0
Speaking ability	17	3.76	2.0	4.0
Spelling and grammar	17	3.91	3.0	4.0
Ability to answer questions	17	3.72	3.0	4.0

## Recommendations

### Written Communication:

Two specific areas related to the written communication rubric still need further improvement based on this assessment.

- (1) Content development: Students still lack a grasp of the expected context and purpose of the written assignment. The content of the writing assignment often reflects a superficial general knowledge and use of the selected plant species, but fail to focus on the specific propagation and plant production practices which is the intent of the assignment. A lack of detailed understanding and explanation of standard propagation methodology indicates little in-depth knowledge of the subject matter important to their understanding of the discipline.
- (2) Sources and evidence: As mentioned earlier, the current Covid-19 pandemic negatively impacted student's ability to research primary sources of information. As such, the sources

of information were, in most cases, limited to internet Google searches. On the first rough draft iteration, citations were not in standard format for horticultural publications. The lack of using original sources means that content is superficial and fails to convince an evaluator the student has an in depth understanding of the subject being researched. Additionally, students fail to understand the process of embedding references within the text and labeling and acknowledging images, figures, or other non-original content.

- (3) Syntax and mechanics: Students still need improvement on word choice using standard and conventional horticultural vocabulary to fully and clearly convey meaning and ideas related to the discipline.

#### Oral Communication:

Two areas for improvement were identified.

- (1) Appearance and professional bearing: Although the faculty are cognizant that students have limited means and even more limited wardrobes, students need to understand the importance of presenting a professional appearance and bearing when giving a formal presentation. While the majority of students projected themselves as professionals, several students were either uncertain or lack experience in giving formal professional presentations.
- (2) Introductions and Objectives: It was observed by the faculty evaluators that in several student presentations, background information about their specific internship was lacking and the significance of the internship provider or addressing the objectives of the presentation.

#### **Action Plan:**

This action plan covers the following Student Learning Outcomes assessed above and is based on the recommendations suggested above.

General Skills: Student Learning Outcome - Written Communication.

Discipline Specific Skills: Develop working knowledge of multiple sources, including current and older literature, to find, evaluate, organize, and manage information related to horticultural systems.

Student Learning Outcome 4- Oral Communication.

Appreciate and communicate the diverse impacts of horticulture on people.

### **Actions for Written Communication**

HORT 4403 Plant Propagation:

An action to be taken, in addition to actions incorporated last year, is to devote a lecture or lab session on technical writing as related to the horticulture discipline and develop an example paper using a horticultural plant species for students to use as a model. Additionally, more time will be devoted to original sources and accepted format for citations. The Covid -19 pandemic of this semester did not allow for the opportunity to fully address the above actions.

### **Actions for Oral Communication**

HORT 462V Internship Experience which will be replaced with HORT 472V03 Internship Assessment in the fall of 2020:

As HORT 472V will become the Department of Horticulture's capstone class to meet the requirements of the new General Education mandate 6.1, greater expectations and content delivery from the students will be required. The amount of time allotted each internship presentation will be increased to allow the student to more fully develop the presentation so as to provide a greater depth of reflection on how the internship experience was influenced by the prior coursework and experiences as an undergraduate at the University of Arkansas. To meet these new enhanced requirements, the instructor of record and/or other interested faculty will require a mandatory minimum number of in-class sessions with the enrolled students prior to the students scheduled seminar presentation to give instruction on expectations and information on general professionalism in the horticulture discipline.

## ATTACHMENT 1

**Written Communication Scoring Rubric:** The definition of written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum. The rubric is scored from 1 to 4. However, evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark 1 level performance. This rubric was used for both the general skill assessment and the discipline specific assessment.

### **Context of and Purpose for Writing:**

Benchmark 1.

Demonstrates minimal attention to context, audience, purpose, and to the assigned tasks(s) (e.g., expectation of instructor or self as audience).

Milestone 2.

Demonstrates awareness of context, audience, purpose, and to the assigned tasks(s) (e.g., begins to show awareness of audience's perceptions and assumptions).

Milestone 3.

Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s) (e.g., the task aligns with audience, purpose, and context).

Capstone 4.

Demonstrates a thorough understanding of context, audience, and purpose that is responsive to the assigned task(s) and focuses all elements of the work.

### **Content Development:**

Benchmark 1.

Uses appropriate and relevant content to develop simple ideas in some parts of the work.

Milestone 2.

Uses appropriate and relevant content to develop and explore ideas through most of the work.

Milestone 3.

Uses appropriate, relevant, and compelling content to explore ideas within the context of the discipline and shape the whole work.

Capstone 4.

Uses appropriate, relevant, and compelling content to illustrate mastery of the subject, conveying the writer's understanding, and shaping the whole work.

**Attachment 1 (cont.)****Genre and Disciplinary Conventions:**

Benchmark 1.

Attempts to use a consistent system for basic organization and presentation.

Milestone 2.

Follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation.

Milestone 3.

Demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices.

Capstone 4.

Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task (s) including organization, content, presentation, formatting, and stylistic choices.

**Sources and Evidence:**

Benchmark 1.

Demonstrates an attempt to use sources to support ideas in the writing.

Milestone 2.

Demonstrates an attempt to use credible and/or relevant sources to support ideas that are appropriate for the discipline and genre of the writing.

Milestone 3.

Demonstrates consistent use of credible, relevant sources to support ideas that are situated within the discipline and genre of the writing.

Capstone 4.

Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the discipline and genre of the writing.

**Control of Syntax and Mechanics:**

Benchmark 1.

Uses language that sometimes impedes meaning because of errors in usage.

Milestone 2.

Uses language that generally conveys meaning to readers with clarity, although writing may include some errors.

Milestone 3.

Uses straightforward language that generally conveys meaning to readers. The language in the portfolio has few errors.

Capstone 4.

Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is virtually error-free.