

Program Assessment Report
B.S. in CPSC
Crop, Soil, and Environmental Sciences
University of Arkansas
2020-2021

Program: B.S. in Crop Science

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- **Results of analysis of assessment of Student Learning Outcome**

The Crop Science (CPSC) degree-seeking students have been evaluated for knowledge and oral communication skills the previous four academic years. This year problem solving was specifically evaluated in CSES 4224 Soil Fertility, which is a required course in the CPSC degree program. Four senior CPSC students were evaluated during a complex, multi-step, real-world computation and decision making problem-solving exercise. Scores for all components rated a median level of proficient for at least 75% of students evaluated, and were proficient for all students evaluated for defining the problem, proposing solutions, and implementing solutions. For the knowledge outcome, nine CPSC students in the CSES 2103 Crop Science course took the pre-test for crop science knowledge and six students in CSES 4013 Advanced Crop Science completed the post-test during the spring 2021 semester. Scores did improve but only by 7% and not by the desired 50% increase that is the target increase level. Scores increased from a median of 52% to 60% correct.

- **Any changes to degree/certificate planned or made on the basis of the assessment and analysis**

While CPSC added problem solving to curriculum assessment this academic year, there are five years of knowledge data using the same post-tests, and three years where both pre- and post-assessment test results are available. In those three years where pre- and post-test were administered the same year, student scores improved between pre- and post-assessment testing. This year, pre-test assessments were given late during the spring semester, which may explain the relatively high scores of pre-tests, or the lower gains between pre- and post-testing, i.e. 7% increase in scores. The 50% (acceptable) and 80% (ideal) gains in scores are large increases if students do well initially on pre-tests. If post-test scores should be higher than they have been, faculty should evaluate what needs to occur within the curriculum. This CPSC degree plan does provide the students with options to choose among several courses within particular “groups”, which although that provides flexibility to students, these course options also make it more difficult to assess a similar curriculum among all students within the major. Additionally, CPSC supports a relatively large transfer student population, rather than attracting all incoming high school graduates into the major as traditional freshmen. Furthermore, the difficulties of dealing with COVID-19 during the past academic year may have affected student learner outcome

performance, but may also be difficult to determine with a small population of students who are taking pre- and post-tests and by assessing problem solving exercises.

- **Any changes to the assessment process made or planned.**

Crop Science faculty were encouraged to consider how to effectively implement assessment of critical thinking and problem solving. The fertility exercise in the Soil Fertility course is an appropriate exercise to use to assess problem solving, and likely in the future to consider for assessing critical thinking, as both types of skills are required to complete the exercise. Next year, perhaps application of the critical thinking rubric could be applied to assess the logic in decision making within the same course exercise. This would facilitate assessment within a curriculum that offers course options and has a relatively large number of transfer students who enter the program at different stages within their degree program.