Annual Program Assessment Report

Assessment reports are to be submitted annually by program/s. The report deadline is September 15th .

The use of this template is optional, however, any assessment report submitted must contain the required information provided in template.

Academic Year: 2019-2020

Department: Plant Sciences and Plant Pathology

Program(s) Assessed:

Indicate all majors, minors, certificates and/or options that are included in this assessment:

Majors/Minors/Certificate	Options
Plant Science	**Plant Biotechnology**

Annual Assessment Process

1. Date are collected as defined by Assessment Plan

   Yes X No _____

2. Population or unbiased samples of collected assignments are scored by at least two faculty members using scoring rubrics to ensure inter-rater reliability.

   Yes X No ____

3. Areas where the acceptable performance threshold has not been met are highlighted.

   Yes ___ No ____ NA X

4. The scores are presented at a program/unit faculty meeting for assessment.

   Yes X No ____0

5. The faculty reviewed the assessment results, and responds accordingly (check all appropriate lines)

   Gather additional data to verify or refute the result. _____
   Identify potential curriculum changes to try to address the problem __X___
   Change the acceptable performance threshold, reassess _____
   Choose a different assignment to assess the outcome _____

   Faculty may reconsider thresholds_____
   Evaluate the rubric to assure outcomes meet student skill level _____
   Use Bloom's Taxonomy to consider stronger learning outcomes _____
   Choose a different assignment to assess the outcome_____

   OTHER:

6. Does your report demonstrate changes made because of previous assessment results (closing the loop)? Yes X No ____

1. What Was Done

a) What learning outcomes were reviewed? (Please include the description of the learning outcomes from assessment plan)

Course		1	2	3	4	Assignments Used for Assessment
All Required Courses	**Cr.**	Have the knowledge required to be successful in an area of plant improvement achieved via both basic and advanced techniques.	Have the laboratory and plant culture skills needed to be able to function successfully in an area of plant	Be able to communicate effectively orally and in writing.	Be able to design and carry out plant genetic and/or biotechnology experiments and analyze data.	**note which outcome is being assessed**
AGSC 341 Field Crop Prod	3	D	D			Final presentations and performance on exams.
BIOB 375--General Genetics	3	I	I			Performance on examx.
BIOO 433--Plant Physiology	3	D	D			
BIOB 430 - Plant Biotechnology	3	D	D	D	D	Lab reports and final presentation
HORT 447 - Advanced Plant Propagation	3	I	D			Performance on exams.
BIOM 421 - Concepts of Plant Pathology	3	I	I		?	Demonstration of knowledge in class and in lab.
BIOO 460 - Plant Metabolism	3	D		D		Exams and reports.
BIOB 490R - Undergraduate Research or BIOB 498 - Internship/Cooperative Edu	3	M	M		I	Ability to research and complete a series of experiments.

The performance of students within the Plant Biotechnology degree option was assessed. Assessment involved student performance primarily in three courses. These were the required senior level class Plant Biotechnology (BIOB 430), the required senior level class Plant Pathology (BIOB 421) and the senior independent research project course (BIOB 490R).

Program Learning Outcomes

Our graduates will:

1. Have the knowledge required to be successful in an area of plant improvement achieved via both basic and advanced techniques.
2. Have the laboratory and plant culture skills needed to be able to function successfully in an area of plant improvement.
3. Be able to communicate effectively orally and in writing.
4. Be able to design and carry out plant genetic and/or biotechnology experiments and analyze data.

Giroux assessed student performance in the lecture and lab sections of BIOB 430 along with assessing performance in BIOB 421 and Giroux and other PSPP faculty assessing performance (Lachowiec and Dyer) in BIOB 490R and in BIOB 421 (Dyer). The lab portions of both courses in spring 2020 and assessment of student lab skills was hampered by the move to online teaching.

b) Include planning table – inform if there are changes to the assessment plan.

Program Learning Outcome Assessment Schedule

	Cycle 1			**Cycle 2**		
Outcome	**2014-2015**	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**
1	X	X		X		
2	X	X		X		
3		X			X	
4		X	X			X

Assessment Process Review Schedule

	Cycle 1			Cycle 2		
Element	**2014-2015**	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**
Outcomes	X			X		
Rubrics		X			X	
Curriculum Map			X			X
Schedules			X			X

Note: These values should be updated using faculty input.

Performance Thresholds

Outcome	Threshold
1	70% of students score at the "acceptable" or higher level.
2	70% of students score at the "acceptable" or higher level.
3	70% of students score at the "acceptable" or higher level.
4	70% of students score at the "acceptable" or higher level.
5	70% of students score at the "acceptable" or higher level.

No changes are planned.

2. What Data Were Collected

a) What was collected to assess learning outcomes listed above? (If multiple programs/minors are included, please indicate if different criteria were used).

1. BIOB 430, Plant Biotechnology is taught in even alternate years and so was offered in spring of 2020. There were seven Plant Biotech majors in BIOB 430 spring 2020. Most of the students in question worked on independent study project in Giroux's or neighboring PSPP labs and so their proficiency was readily assessed. All students in question were well known by numerous committee members and thus student performance could be assessed with performance on the written research report and many one-on-one professional interactions. The students also did professional presentations on their BIOB 490R research projects.

3. Explain how Data Were Analyzed

a) Explain the assessment process. Who participated in the process, the nature of the rubric utilized (or other norming methods), and the threshold outcome desired.

Giroux tracked the student's attendance, participation, and performance in carrying out independent research projects. He met with the students at least weekly during the semester of their research project.

Spring 2020 – BIOB 490R- Independent Research- Two students wrote an excellent proposal that was funded by the MSU undergraduate scholars' program. They actively worked to make progress on their project, gained valuable experience and proficiency in common techniques, and presented a poster on their research project at the end of year student research day.

4. What Was Learned

a) Results:

While no students graduated in spring 2020 in Plant Biotechnology, seven students were assessed as seven were enrolled in BIOB 430 Plant Biotechnology or in BIOB 421 or in BIOB 490R working on an independent research project. All demonstrated proficiency in written and oral presentation and six of seven demonstrated competencies in common lab techniques useful in studying plant genes. There is no doubt that PSPP taught senior level courses with lab components and independent research projects are very important to students' overall development.

5. How We Responded

No changes are needed for assessments to be conducted during the coming year.

6. Closing the Loop

a) Do any of the outcomes this year represent improvements based on assessment from previous years (show multi-year use of progress).

Plant Biotech student major graduates will increase in the next year as there are currently seven seniors. Six of the seven students were proficient in both lab and oral and written communication. One of the students lacked proficiency in lab techniques. All students complete independent research projects and are on track to graduate on time.

Submit report to programassessment@montana.edu