

UNIT REPORT

**Soil & Water Systems-Academic -
APR Self-Study Report by
Academic Unit/Department**

Generated: 3/15/22, 2:29 PM

Program Mission

Department of Soil and Water Systems Mission Statement

Program Mission Statement:

To serve the citizens of Idaho and beyond by providing high-quality, cutting-edge research, teaching and Extension programs focused on the sustainable use of soil and water resources and the resilience of agricultural and wildland systems.

Program Goal (add a minimum of 3 program goal "plan items")

Goal 1: Research

Goal Statement:

Support the Land Grant Mission by conducting cutting-edge, transformative research.

Alignment to UI Strategic Plan Goals:

Innovate (Goal 1): Scholarly and creative products of the highest quality and scope, resulting in significant positive impact for the region and the world.

Indicators/Metrics to Evaluate Progress:

1. Number of faculty meeting or exceeding departmental expectations for number of publications.
2. Continual increase in the number of grant proposals funded.
3. Number of invited presentations that faculty receive.
4. Double the value of annual research expenditures.
5. Number of internal and external awards and recognition received by faculty and staff.

List of Actions the Program Will Take to Achieve Goals :

Mentoring of faculty, both by formal mentoring committees and from the department head will focus on helping faculty to achieve goals. Faculty will be encouraged to submit proposals and manuscripts for peer-review in order to improve the quality and chance for success. Faculty will be encouraged to be active in their societies and with funding agencies in order to increase collective knowledge of grant programs and goals. This will allow us to assemble teams and develop more collaborative, large proposals that lead to transformative changes and the discovery of new knowledge.

Goal Achievement Level: In Progress

Goal 2: Increase our impact in teaching

Goal Statement:

Increase the number of undergraduates and graduate students prepared to work on natural resources and agricultural-related issues.

Alignment to UI Strategic Plan Goals: Transform (Goal 3): Increase our educational impact.

Indicators/Metrics to Evaluate Progress:

1. Increased number of MS and PhD students mentored by SWS faculty to a three-year-average of 40.
2. Increase the number of BS students in our degree programs and maintain a three-year-average of 70.
3. Increase the number of degrees awarded.

List of Actions the Program Will Take to Achieve Goals :

Promote new and existing degree programs through printed materials, increased interactions with CALS Ambassadors, social media and faculty classroom visits. Encourage faculty to maintain up-to-date laboratory websites that attract students. Increase opportunities for students to gain hands-on activities through laboratories, work and independent research experiences.

Goal Achievement Level: In Progress

Goal 3: Extension

Goal Statement:

1. Increased number of invited presentations made by Extension faculty.

2. Increase the number of stakeholders reached through field days, tours, workshops and schools.
3. Improve reporting of impacts due to Extension activities and programs.

Alignment to UI Strategic Plan Goals:

Engage (Goal 2): Suggest and influence change that addresses societal needs and global issues, and advances economic development and culture.

Indicators/Metrics to Evaluate Progress:

1. Annual increases in the number of stakeholders reached through Extension events.
2. Increased reporting and ability to track impacts of SWS Extension programs.

List of Actions the Program Will Take to Achieve Goals :

Increase time spent focused on strategic planning in the area of Extension, especially in relation to pandemic impacts on the delivery of information. Creation and/or adoption of a more comprehensive reporting of the activities and impacts of our extension-based programs facilitated through the use of digital measures.

Goal Achievement Level: In Progress

Student Learning Assessment Report (add one "plan item" for each major, degree, and/or certificate offered by dept)

Water Science and Management (BS)

Assessment Report Contact: Erin Brooks, Jodi Johnson-Maynard

Program Changes in Past Year:

The program was streamlined to reduce the required credits to 120.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

1.

Content Knowledge

Students demonstrate knowledge of the physical, biological and chemical principles that determine function in soil and water systems.

Academic Year 2020-2021: **Water Science & Management (B.S.S.W.S.)**

Term: **Spring 2021**

Exceeded	<div style="width: 100%; height: 10px; background-color: green;"></div>	100%	2
Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0
<hr/>			
Partially Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0
Not Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0

2.

Communicate

Students can effectively communicate science-based data to a variety of audiences.

Academic Year 2020-2021: **Water Science & Management (B.S.S.W.S.)**

Term: **Spring 2021**

Exceeded	<div style="width: 100%; height: 10px; background-color: green;"></div>	100%	2
Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0
<hr/>			
Partially Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0
Not Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0

3.

Applied Knowledge

Students gain experiential experience in applying their knowledge through internships and participating in student organizations.

Academic Year 2020-2021: **Water Science & Management (B.S.S.W.S.)**

Term: **Spring 2021**

Exceeded	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0
Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0
<hr/>			
Partially Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0
Not Met	<div style="width: 0%; height: 10px; background-color: gray;"></div>	0%	0

Summary of Student Learning:

Students appear to be doing well and are able to apply concepts learned in classes to real-world situations and problems. Additional years of data will be helpful in assessing learning since this is a relatively new degree program and few students are currently in upper division courses.

Summary of Faculty Discussion:

Faculty discussion has been focused on the structure of the program and student recruiting. Reports on learning outcome assessments will be focused on at an upcoming faculty meeting.

Summary of Changes/Improvements Being Considered:

Given the limited time that we have had for assessment and student feedback, we will most likely continue to focus on student recruitment. We are developing a new course that would be taken by first semester students. This course will help provide information on career paths, basic hydrologic processes and issues and allow for a more comprehensive cohort experience.

Inter-rater Reliability:

Sharing of rubrics and findings will assist with efforts to be consistent with evaluation and assessment across courses in our department.

Closing the Loop:

Addition of metrics that 1) include students relatively early in their programs and 2) including metrics that go beyond student grades.

Soil and Land Resources (PhD)

Assessment Report Contact: Jodi Johnson-Maynard

Program Changes in Past Year:

This program has not been significantly changed in the past year.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:**Import Outcomes Data (from Anthology Outcomes):**

1.

Evaluation Skills

Students can analyze complex environmental problems and synthesize conclusions on controversial environmental or agricultural issues by objectively evaluating the validity and scientific value of data obtained from multiple sources.

Academic Year 2020-2021: Soil & Land Resources (Ph.D.)

Term: **Overview**

Exceeded		0%	0
Met		100%	1
Partially Met		0%	0
Not Met		0%	0

4.

Communication Skills

Students can communicate scientific information in written or oral form to teach or train others in the individual's field of expertise, provide soil science expertise to regional planners, government entities, private citizens, or commercial firms for the purpose of decision making and the general population in an effective manner

Academic Year 2020-2021: Soil & Land Resources (Ph.D.)

Term: **Overview**

Exceeded		0%	0
Met		100%	1
Partially Met		0%	0
Not Met		0%	0

Summary of Student Learning:

As of Fall 2021, 4 of the 13 PhD students advised in SWS are in the Soil and Land Resources PhD program. This represents an increase in enrollment that is expected to continue as relatively new faculty members continue to build their programs. Growth is positive and is expected to continue. Student quality is high in terms of GPAs and performance on proposals, presentations and written documents. COVID did make assessment more difficult in that student travel was restricted and opportunities to present outside of the university were limited.

Summary of Faculty Discussion:

Faculty discussion was focused on the qualifying exam procedures. Guidelines were updated to better reflect the interdisciplinary nature of work conducted in our laboratories and to focus more on application and critical thinking. Two students have now completed their written exams and results will be discussed to determine if further changes need to be made.

Summary of Changes/Improvements Being Considered:

Discussion around the written exam is ongoing and further changes may be necessary.

Inter-rater Reliability:

Creation, sharing and application of rubrics help ensure that students are assessed in a similar manner across courses and activities.

Closing the Loop:

It is a bit early to determine the impact of changes in policy regarding written and oral PhD exams. Growth in the program will mandate greater communication and use of common tools to make sure that we continually improve the program.

Soil and Land Resources MS

Assessment Report Contact: Jodi Johnson-Maynard

Program Changes in Past Year:

This program has not been substantially changed in the past year.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:**Import Outcomes Data (from Anthology Outcomes):**

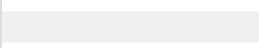

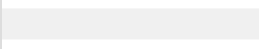

1.

Knowledge Skills

Students demonstrate knowledge of the physical, biological and chemical principles that determine function in soil and water systems.

Academic Year 2019-2020: Environmental Soil Science (B.S.S.W.S.)

Term: Overview

Exceeded		0%	0
Met		100%	1
Partially Met		0%	0
Not Met		0%	0



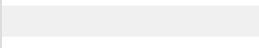

1.

Evaluation Skills

Students will be able to analyze complex environmental problems and synthesize conclusions on environmental or agricultural issues by objectively evaluating the validity and scientific value of data obtained from multiple sources.

Academic Year 2020-2021: Soil & Land Resources (M.S.)

Term: Overview

Exceeded		0%	0
Met		100%	1
Partially Met		0%	0
Not Met		0%	0





2.

Communication Skills

Student will be able to communicate scientific information in written or oral form in an effective manner.

Academic Year 2020-2021: Soil & Land Resources (M.S.)

Term: Overview

Exceeded		0%	0
Met		100%	1
Partially Met		0%	0
Not Met		0%	0

Summary of Student Learning:

Nine of the 31 MS students advised by SWS faculty are in the Soil and Land Resources major as of Fall 2021. Enrollments are healthy and should continue to grow. Students are succeeding in their courses and with their research. Since the formal assessment of student proposals is a relatively new requirement, the completion rate is relatively low.

Summary of Faculty Discussion:

Discussion is ongoing and focused on the need to upload and share data to better inform our assessment procedures. This was a somewhat difficult year to assess our metrics that relate to the presentation and sharing of research results as COVID prevented many of our students from traveling and presenting at scientific meetings.

Summary of Changes/Improvements Being Considered:

Improvements include learning about and becoming more comfortable with the Anthology software so that we may gather, store and analyze student data in a more efficient, organized and comprehensive manner.

Inter-rater Reliability:

The use and sharing of rubrics will help make sure that faculty have similar expectations when assessing student work.

Closing the Loop:

Past assessment data have been helpful in that results have pointed out parts of the curriculum that need to be stressed to a greater degree. Primarily, it has made the need to enhance our data collection system, which should be improved as we all begin to use Anthology to a greater extent.

Environmental Soil Science (BS)

Assessment Report Contact: Jodi Johnson-Maynard

Program Changes in Past Year:

Minor changes were made to the program last year. A 500-level section of Soil 456 North Idaho Field Trip was added due to the growing number of graduate students taking the course.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

1.

Knowledge Skills

Students demonstrate knowledge of the physical, biological and chemical principles that determine function in soil systems.

Academic Year 2020-2021: Environmental Soil Science (B.S.S.W.S.)

Term: **Overview**

Exceeded		100%	1
Met		0%	0
Partially Met		0%	0
Not Met		0%	0

2.

Communication Skills

Students can effectively communicate science-based data to a variety of audiences.

Academic Year 2020-2021: Environmental Soil Science (B.S.S.W.S.)

Term: **Overview**

No Results

3.

Experiential Skills

Students gain experiential experience in applying their knowledge through internships and participating in student organizations.

Academic Year 2020-2021: Environmental Soil Science (B.S.S.W.S.)

Term: **Overview**

No Results

Summary of Student Learning:

Two learning outcomes were assessed in 2019-2020. Due to the limited numbers of students enrolled, the data is summarized and reliable conclusions can't be made at this point. With this said, students enrolled met or exceeded metrics set in knowledge and communication skills. Learning included the fact that all of our metrics are focused on upper classmen (junior and seniors) and that we need a new way to assess how students at the freshman and sophomore levels are performing as they build a foundation that will allow them to do well in the upper division courses.

Summary of Faculty Discussion:

Faculty discussion was focused on how to recruit greater numbers of students into this degree program. The main action taken was to reduce the total number of credits necessary for the degree from 128 to 120 (change submitted in fall 2021). This was accomplished in a way that 1) maintained the strong science-based foundation in chemistry, physics and biology and 2) continues to allow students to take multiple electives to round out their degree program. Faculty also discussed ways to increase student interactions and cohort building within the program.

Summary of Changes/Improvements Being Considered:

Metrics that are applied to students earlier in the degree program (freshmen and sophomores) may help aid retention and allow us to better detect students that are struggling early on in the program.

Inter-rater Reliability:

Rubrics are suggested as a way to make sure that students are assessed in an equitable fashion in different courses and experiences (internships, etc).

Closing the Loop:

This program has not been significantly changed for many years. Paperwork to reduce the number of credits was submitted in fall 2021. Recruitment efforts have been increased and a new senior exit survey developed. The survey will help identify areas for change. Finally, grading rubrics used in each class need to be linked to the assessment program in a manner that facilitates the transfer of information. This may be enhanced with the adoption of Canvas course management software.

Sustainable Food Systems (BS)

Assessment Report Contact: Alison Detjens, Jodi Johnson-Maynard

Program Changes in Past Year:

This program was substantially revised to reduce the number of required credits to 120 and allow greater flexibility for students who want to focus on either sustainable food production or other aspects of the food system.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):


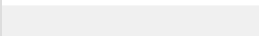
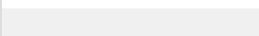

1.

Scientific Thinking

Students can apply scientific principles and systems thinking to the development and management of sustainable agricultural and food systems.

Academic Year 2019-2020: Sustainable Food Systems (B.S.Ag.L.S.)

Term: Spring 2020

Exceeded		50%	1
Met		0%	0
Partially Met		0%	0
Not Met		50%	1




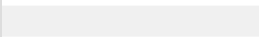
2.

Assess Sustainability

Students demonstrate the ability to assess the sustainability of agricultural and food systems using a systems-based approach applying economic, social and natural-resource related criteria.

Academic Year 2019-2020: Sustainable Food Systems (B.S.Ag.L.S.)

Term: Spring 2020

Exceeded		50%	1
Met		0%	0
Partially Met		50%	1
Not Met		0%	0



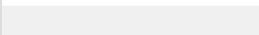
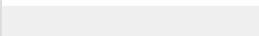
3.

Professionalism

Students understand the roles and responsibilities of food systems professionals in society.

Academic Year 2019-2020: Sustainable Food Systems (B.S.Ag.L.S.)

Term: Spring 2020

Exceeded		100%	1
Met		0%	0
Partially Met		0%	0
Not Met		0%	0

Summary of Student Learning:

The data looked only at direct measures of learning outcomes. All students in this course met the learning outcome for the Farm and Community Group Project. This project required students to assess a need on the UI Organic Farm, formulate possible solutions and work together to come up with a plan for implementation. This assessment is important because it provides students with the opportunity to create new materials based on what they have learning in the course and throughout coursework in their major. One student did not meet the metric for "knowledge skills".

Summary of Faculty Discussion:

Faculty discussion was focused on recruiting a greater number of students into this program and reducing the number of required credits to 120.

Summary of Changes/Improvements Being Considered:

In the future, adjustments to the timing of due dates will be considered to allow students to have more time to implement changes or upgrades from their projects to the farm. This should improve the performance of students and result in greater learning.

Inter-rater Reliability:

Closing the Loop:

Now that major curriculum changes have been made, we are focusing on streamlining the student experience and making improvements whenever possible. Creating rubrics for each learning outcome assessment is one improvement that will be discussed. Another will be the addition of learning outcomes that depend on more courses and are not entirely focused on students with senior standing.

Agricultural Systems Management (BS)

Assessment Report Contact: Marvin Heimgartner

Program Changes in Past Year:

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

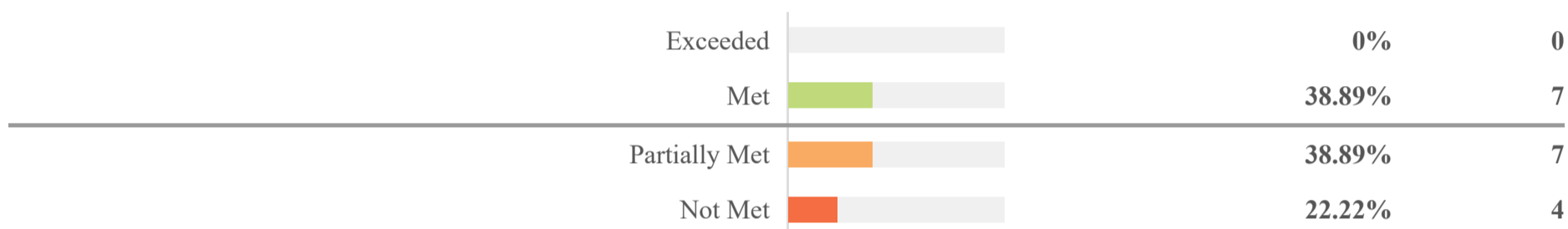
1.

Knowledge Skills

Students have the technical skills and knowledge needed to understand, modify, and integrate agricultural equipment systems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



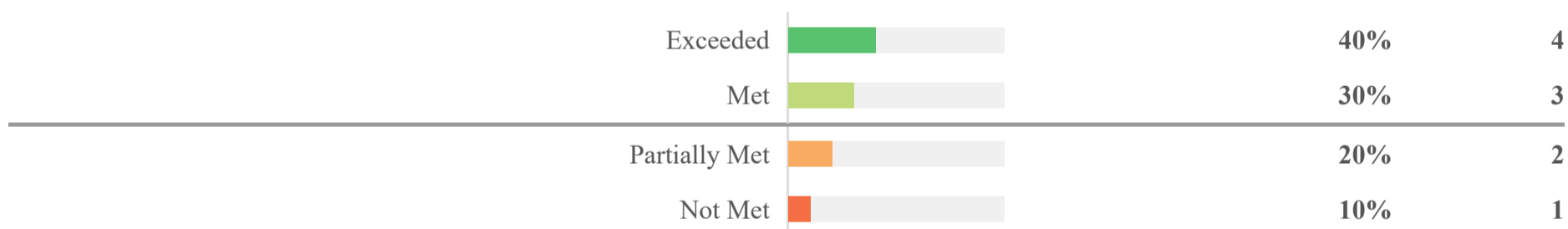
2.

Technical Skills

The graduate uses his or her knowledge of business and physical and biological sciences to creatively solve technical agricultural problems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



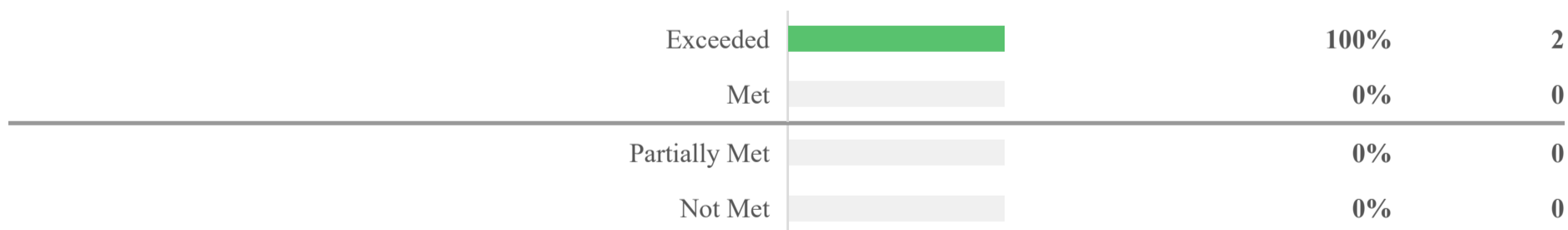
3.

Professionalism

The graduate has the techniques, skills and modern ASM tools necessary for professional practice.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



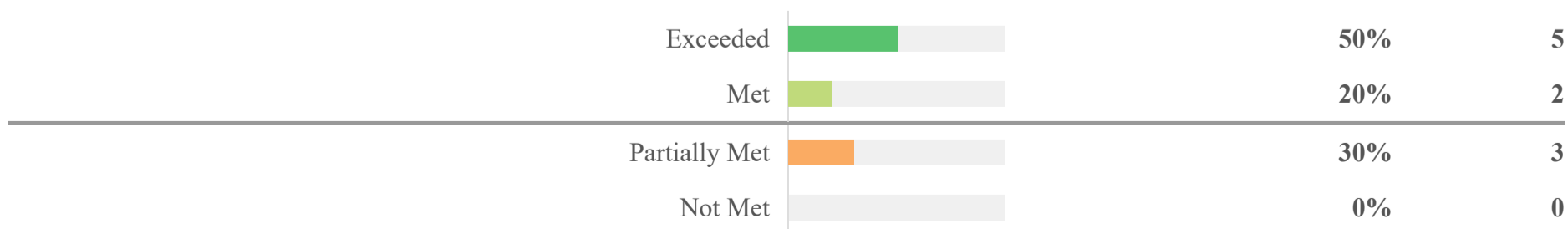
4.

Communication Skills

Students can effectively communicate regarding agricultural technology and the solutions to agricultural management problems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



Summary of Student Learning:

Summary of Faculty Discussion:

Summary of Changes/Improvements Being Considered:

Inter-rater Reliability:

Closing the Loop:

Agricultural Systems Management (BS)

Assessment Report Contact: Alison Detjens; Jodi Johnson-Maynard

Program Changes in Past Year:

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

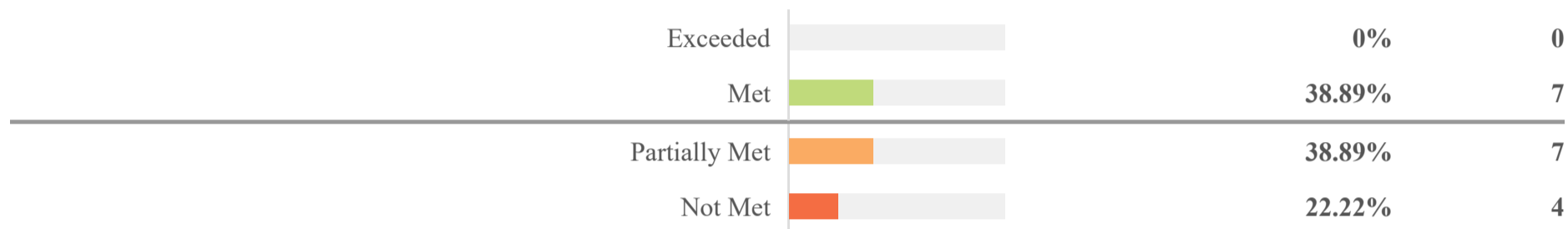
1.

Knowledge Skills

Students have the technical skills and knowledge needed to understand, modify, and integrate agricultural equipment systems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



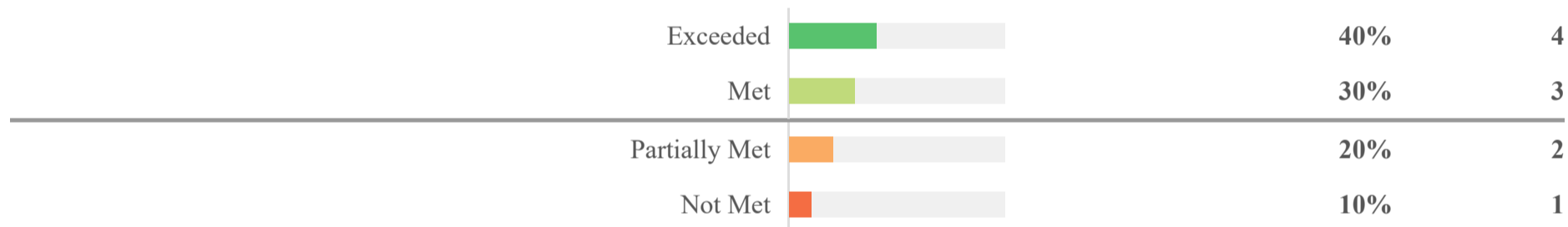
2.

Technical Skills

The graduate uses his or her knowledge of business and physical and biological sciences to creatively solve technical agricultural problems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



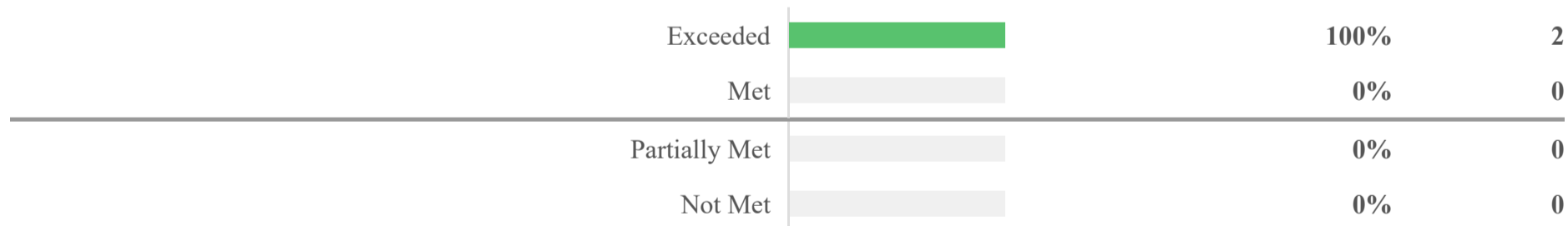
3.

Professionalism

The graduate has the techniques, skills and modern ASM tools necessary for professional practice.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



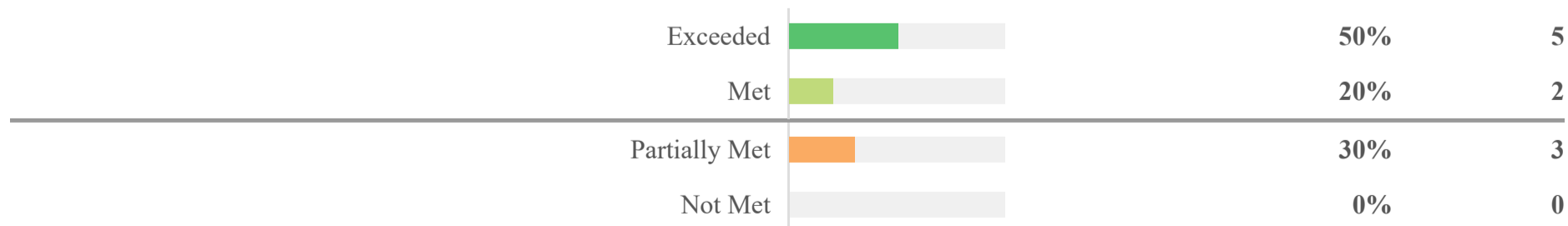
4.

Communication Skills

Students can effectively communicate regarding agricultural technology and the solutions to agricultural management problems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview



Summary of Student Learning:

Summary of Faculty Discussion:

Summary of Changes/Improvements Being Considered:

Inter-rater Reliability:

Closing the Loop:

Agricultural Systems Management BS

Assessment Report Contact: Jodi Johnson-Maynard; Marvin Heimgartner

Program Changes in Past Year:

The ASM curriculum was revised to 1) reduce the number of credits to 120, and 2) eliminate courses that no longer have instructors. A course (ASM 240) was also redesigned and moved from the "dormant" to the "active" list. This updated course was added to the requirements for the degree.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

Summary of Student Learning:

Summary of Faculty Discussion:

Summary of Changes/Improvements Being Considered:

Inter-rater Reliability:

Closing the Loop:

Sustainable Food Systems BS

Assessment Report Contact: Jodi Johnson-Maynard; Alison Detjens

Program Changes in Past Year:

The curriculum was revised extensively to 1) reduce the number of credits to 120 and 2) allow greater flexibility in the curriculum. This changes are reflected in the 2021-2022 catalog.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):


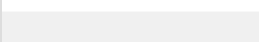
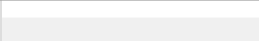

1.

Scientific Thinking

Students can apply scientific principles and systems thinking to the development and management of sustainable agricultural and food systems.

Academic Year 2019-2020: Sustainable Food Systems (B.S.Ag.L.S.)

Term: **Overview**

Exceeded		50%	1
Met		0%	0
Partially Met		0%	0
Not Met		50%	1


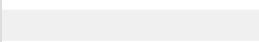

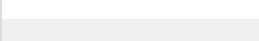
2.

Assess Sustainability

Students demonstrate the ability to assess the sustainability of agricultural and food systems using a systems-based approach applying economic, social and natural-resource related criteria.

Academic Year 2019-2020: Sustainable Food Systems (B.S.Ag.L.S.)

Term: **Overview**

Exceeded		50%	1
Met		0%	0
Partially Met		50%	1
Not Met		0%	0


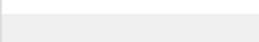
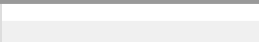
3.

Professionalism

Students understand the roles and responsibilities of food systems professionals in society.

Academic Year 2019-2020: Sustainable Food Systems (B.S.Ag.L.S.)

Term: **Overview**

Exceeded		100%	1
Met		0%	0
Partially Met		0%	0

Not Met		0%	0
---------	--	----	---

Summary of Student Learning:

Summary of Faculty Discussion:

Summary of Changes/Improvements Being Considered:

Inter-rater Reliability:

Closing the Loop:

Agricultural Systems Management (BS)

Assessment Report Contact: Marvin Heimgartner, Jodi Johnson-Maynard

Program Changes in Past Year:

The number of credits required was reduced from 128 to 120 as per recommendations from SBOE and UI. A number of additional changes increased flexibility in completing the degree program and the general education oral communication requirement. Several courses that no longer had instructors were eliminated from the degree requirements (ASM 412, 433). ASM 240 was activated and updated to reflect the growing importance of understanding computer systems, mapping and modeling. This course was added as a requirement.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

1.

Knowledge Skills

Students have the technical skills and knowledge needed to understand, modify, and integrate agricultural equipment systems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview

Exceeded		0%	0
Met		38.89%	7
Partially Met		38.89%	7
Not Met		22.22%	4

2.

Technical Skills

The graduate uses his or her knowledge of business and physical and biological sciences to creatively solve technical agricultural problems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview

Exceeded		40%	4
Met		30%	3
Partially Met		20%	2
Not Met		10%	1

3.

Professionalism

The graduate has the techniques, skills and modern ASM tools necessary for professional practice.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview

Exceeded		100%	2
Met		0%	0
Partially Met		0%	0
Not Met		0%	0

4.

Communication Skills

Students can effectively communicate regarding agricultural technology and the solutions to agricultural management problems.

Academic Year 2020-2021: Agricultural Systems Management (B.S.S.W.S.)

Term: Overview

Exceeded		50%	5
Met		20%	2

Partially Met		30%	3
Not Met		0%	0

Summary of Student Learning:**Summary of Faculty Discussion:**

Faculty discussion focused on curricular revisions during the assessment period. Data from this assessment will be discussed in an upcoming meeting focused on learning outcome assessment. This process will hopefully be informed by the results of a new faculty hire (search currently in progress).

Summary of Changes/Improvements Being Considered:

The graduating senior survey will be reviewed and conducted each semester. Greater use of rubrics will be discussed.

Inter-rater Reliability:

Sharing rubrics across faculty will help ensure that students are assessed in a consistent manner. All faculty will be reminded of the specific learning outcomes for each program in the department.

Closing the Loop:

Assessment and feedback from our graduating seniors has helped guide decisions around reducing credits and maintaining laboratory-based courses.

Student Achievement

New Student Achievement Item

Student Retention:

Greater availability of institutional data has recently made it easier to track metrics including retention. The department head will report these values to faculty once a year. Retention from spring 21 to fall 21 was very high for the department (92%), which is very good considering the potential impact of COVID on students wanting to return to campus. In addition, institutional data shows that over half of our undergraduate students are first-generation.

Student Persistence:

Based on retention data from spring 21 to fall 21, retention is relatively high (92%) across the department.

Student Completion:

The departmental retention rate and percentage of students passing courses (minimum of 85% over the last four semesters) suggests that students are advancing in the program at an acceptable rate.

Student Postgraduate Success:

Postgraduate success is somewhat difficult to monitor. Our graduating senior exit surveys allow students to leave a non UI email address so that we may continue to stay in touch with them. Most, but not all seniors supply this information. In addition to this more "formal" method, many graduates stay in touch with their advisor. Documenting this information is an area where we can improve.

Identify Equity Gaps:

Trends in incoming vs cumulative GPA among students are similar. Cumulative GPAs tend to be lower than the average of incoming freshmen for both first-generation (difference of 0.18) and non first generation (difference of 0.12). Likewise, this difference for female students (0.2) is slightly greater than it is for males (0.1). While these values are similar, they do warrant monitoring to make sure that our students receive the proper mentoring and support.

Effective Learning Environment and Closing Equity Gaps:

From a cultural, ethnic and gender perspective, the diversity of our faculty have increased. We believe that this translates to students being more comfortable with instructors and selecting the most effective mentors for their situation. We encourage students to interact, although gatherings have been restricted due to COVID protocols. We offer three different student organizations that allow students to get to know each other, learn by doing, and practice service to their communities. Greater outreach to specific groups is possible and may limit potential gaps in success and satisfaction.

Demand and Productivity

New Demand and Productivity Item

External Demand:

Enrollments in all degree programs within the department increased between Fall 2020 and Fall 2021, except for the PhD program, which remained steady. It is important to note, that the number of PhD students shown in the dashboard is for students in the Soil and Land Resources major. Faculty in our department advise, as major professor, significantly more students in the Water Resources and Environmental Science programs. Demand for our programs, therefore, appears to be increasing. All faculty should be prepared and willing to help with recruiting events to take advantage of increasing interest in SWS degree programs. Targeted promotional campaigns will also benefit enrollments.

Internal Demand:

Credit hour production within the department has increased in each for the past three years indicating interest and demand for our courses. This is partially due to the creation of new online courses that attract a significant number of students.

Credit Productivity:

Opportunities to increase credit hours include development of our new, freshmen-level water science course. In addition, we have developed a precision agriculture certificate program that should be of interest to a wide range of students in CALS, Engineering and CNR. Finally, our online courses are gaining in popularity. The largest threat is the loss of teaching faculty through retirement or movement to other universities or federal agencies. Reduction in teaching FTEs puts additional stress on existing faculty to offer courses considered to be key to the development of professionals within each field.

Financial Health and Resources

New Financial Health and Resources Item**Financial Health:**

Strengths within the department include the return of research dollars (F&A) on an annual basis. In addition to being relatively successful in terms of receiving large, competitive grants, the department benefits from PhD assistantships provided by the college and a teaching assistantship. Concerns include limited spending allowed on F&A returns when emergency situations (such as the necessary replacement of analytical equipment) occur.

Efficient Use of Resources:

Faculty within the department share analytical equipment and space, collaborate with each other to a high degree, provide assistance with field and laboratory work when needed. Faculty also have productive collaborations with faculty in different units across the university and with faculty at other higher education and federal agencies.

© 2022 Anthology Inc.