Year 0 Assessment Plan Report is due September 15th .

Assessment Plan – Year 0 Report

College: EHHD and College of Agriculture

Department: The SFBS Program is an interdisciplinary degree across four departments (Health and Human Development (HHD), Plant Sciences and Plant Pathology (PSPP), Land Resources and Environmental Sciences (LRES) and Animal and Range Sciences (ANRS)

Submitted by: Mary Stein, MS. Program Leader, SFBS Program

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

Majors/Minors/Certificate	Options
Sustainable Food and Bioenergy Systems	**Sustainable Food Systems (HHD)**
	Sustainable Crop Production (PSPP)
	Agroecology (LRES)
	Sustainable Livestock Production (ANRS)

Part 1: Program Learning Outcomes (PLOs):

Students who graduate with a degree in SFBS will:

PLO#	PLO Description
1.	Analyze food systems through a transdisciplinary approach, guided by sustainability principles (**systems thinking**).
2.	Be effective **communicators** through oral, written and visual formats to diverse audiences.
3.	Demonstrate **practical skills** in the food system based on sustainability principles.
4.	Design, implement, and assess food system solutions across scales. **(Problem-solving)**
5.	
6.	
7.	

Part 2: Development of Assessment Plan
Each plan will require the following information:

2a. Curriculum Map

ASSESSMENT PLANNING CHART						
Program Learning Outcomes	**Course Alignments: Include rubric, number and course title**	**Identification of Assessment Artifact**				
1 (systems thinking)	SFBS146: Intro to Sustainable Food and Bioenergy Systems	Artifact: Eat Montana Project Assignment				
	SFBS466: Food System Resilience, Vulnerability and Transformation	Artifact: Illusion of Water Assignment				
2 (communications)	SFBS296: Practicum – Towne's Harvest Garden	Artifact: Favorite Tool Assignment – (oral presentation)				
	SFBS499: Capstone	Artifact: Systems Thinking Dialogue – Discussion Preparation (written response to prompt)				
3 (practical skills)	SFBS296: Practicum – Towne's Harvest Garden	Artifact: Weed Identification Activity				
	SFBS498: Internship	Artifact: Mentor Feedback Survey: Practical Skills Likert Scale Section				
4 (problem-solving)	SFBS296:	Artifact: Individual Practicum Project				
	SFBS466:	Artifact: Local Food in School Meals Campaign Assignment				
ASSESSMENT SCHEDULE						
		Year to be assessed				
PLO	**Course**	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
1	SFBS146	X				X
1	SFBS466			X		
2	SFBS296			X		
2	SFBS499				X	
3	SFBS296		X			
3	SFBS498				X	
4	SFBS296	X				X
4	SFBS466		X			

Part 3: Program Assessment:

1. **<u>How will assessment artifacts be identified?</u>**
   Assessment artifacts have been identified through consultation with program faculty. Additionally, the SFBS Program faculty have recently completed a multi-institutional

examination of sustainable food system pedagogy and associated assessment with collaborators from the University of Minnesota and University of British Columbia. Outcomes from this research project have informed the specific learning outcomes embedded in this updated SFBS Program Assessment Plan, and MSU faculty further endeavored to identify specific assignments (artifacts) and their associated rubrics that would provide measurable data for each learning outcome.

2. **How will they be collected (and by whom)?**
   During the annual SFBS Program Faculty Meeting (annually in early September), the SFBS Program Leader will outline the Program Assessment Plan for the upcoming academic year, indicating which courses will be contributing to program assessment data and which assignments (artifacts) will be used for collecting that data. Course instructors will administer the assignment identified as the artifact for the specific learning outcomes. Two SFBS faculty (not instructor) will be identified as "graders" for each artifact and will grade a sampling of artifact assignments using the assignment rubric for that specific program learning outcome. All graded data will be sent to Program Leader for inclusion in the annual Program Assessment Report.

3. **Who will be assessing the artifacts?**
   SFBS instructional faculty will serve as "graders" for all assessment assignments. Graders will not be the instructor of record for the course from which the assessment data is arising. Additionally, program learning outcome assessment scores for the specific artifact assignment will not influence the student's earned grade in the course.

Part 4: Program Assessment Plan:

The following rubrics will be for each of the learning outcomes included in program assessment. Artifacts for each learning outcome will be scored according to the appropriate rubric for that program learning outcome (PLO).

PLO #1 Analyze food systems through a transdisciplinary approach, guided by sustainability principles (**systems thinking**). (Adapted from: Hiller Connell, KY, et al, Assessing Systems Thinking Skills in Two Undergraduate Sustainability Courses: A Comparison of Teaching Strategies Journal of Sustainability Education Vol. 3, March 2012).					**Threshold Values**
Indicators	Level 1	Level2	Level 3	Level 4	Upon program completion, 80% of students will meet or exceed Level 3 competency
Identification and explanation of food system components and relationships, guided by sustainability principles.	Identifies and explains issues, goals, and/or problems within the food system as individual details.	Identifies and explains issues, goals, and/or problems within the food system as a series of interrelated details.	Identifies and explains issues, goals and/or problems within the food system from a "big picture" view. Seeks out and considers different perspectives, interactions and sectors.	Identifies and explains issues, goals, and/or problems within the food system from a wide, "big picture" view. Gathers information about the food system to form an overarching assessment of a specific challenge or situation.	
Representation of food system components, relationships and ability to apply representation across a variety of issues, situations or processes.	Creates a model of the food system that includes only discreet, unrelated or inconsequential elements.	Creates a model of the food system that begins to convey relationships between components of the system, but in a simplistic (unidirectional or incomplete) manner.	Creates a model of the food system's relevant set of components and associated complex relationships by taking a whole-system perspective of an issue, problem or process.	Creates a concise model of a system, aggregating detailed information to represent the whole-system perspective on an issue or process.	
Holistic integration of social, environmental and economic factors guided by sustainability principles.	Student struggles to understand the tenets of sustainability, and therefore, is able to identify challenges but not necessarily pertaining to sustainability	Student identifies some of the social, environmental, & economic challenges represented in the scenario.	Student identifies most of the social, environmental, & economic challenges represented in the scenario.	Student identifies all of the social, environmental, & economic challenges represented in the scenario.	

PLO #2: Be effective **<u>communicators</u>** through oral, written and visual formats to diverse audiences.					**Threshold Values**
Indicators	Level 1	Level 2	Level 3	Level 4	Upon program completion, 80% of students will meet or exceed Level 3 competency
Purpose	Purpose is unclear or not overtly stated when appropriate.	Identifies the purpose. Some of content is appropriate to the purpose.	Clearly identifies the purpose. Majority of content is appropriate to purpose.	Clearly identifies purpose and content fully serves to contribute to identified purpose.	
Audience	Demonstrates minimal attention to the audience's identify, knowledge, and context.	Demonstrates some attention to the audience's identify, knowledge and context.	Demonstrates awareness of audience's identity, knowledge and context.	Demonstrates awareness of audience's identity knowledge and context AND engaged with/connected to audience.	
Content Development	Little evidence of understanding of the topic. Disconnect from relevant class content.	Uses appropriate and relevant content to develop ideas. Shows some understanding of issue or topic.	Uses appropriate and relevant content to develop and explore ideas.	Demonstrates understanding of issues or topics by analyzing and synthesizing relevant information.	
Clarity/Organization	Main idea unclear and insufficiently supported by detail.	Main idea clear, needs to improve logical order of examples and/or relevance/quality of evidence.	Main idea clear. Examples follow logical order.	Clearly developed thesis. Organized topics which offer support for main topic. Effective introductions and conclusions.	
Grammar/Language	Errors in grammar and format (spelling, punctuation, capitalization). Errors in language usage sometimes impedes meaning.	Grammar and/or language usage occasionally interferes with communication. Includes some errors.	Communication is grammatically correct, interesting, demonstrates subject area knowledge. Limited errors.	Communication is grammatically correct, interesting, demonstrates subject area knowledge, connects with audience and flows well. Free of errors.	
Sources/Evidence	Struggles to cite sources. Few references. Demonstrates weak attempts to use credible sources to support ideas.	Citations mostly correct. Demonstrates an attempt to use credible and relevant sources to support ideas that are appropriate for discipline.	Cited correctly, but too few or too many examples. Demonstrates use of sources that are appropriate for discipline.	Work is appropriately cited. Demonstrates skillful use of high-quality, credible, relevant sources appropriate for the discipline.	

PLO #3: Demonstrate **<u>practical skills</u>** in the food system based on sustainability principles.					**Threshold Values**
Indicators	Level 1	Level 2	Level 3	Level 4	Upon program completion, 80% of students will meet or exceed Level 3 competency
Task Completion	Unable to complete the task.	The task was completed but needed several major modifications.	The task was completed but needed minor modifications.	The task was completed according to criteria.	
Ability to Follow Directions	Did not follow directions.	Followed directions with limited effectiveness.	Followed directions with moderate effectiveness.	Followed directions with high degree of effectiveness.	
Demonstrated Knowledge of Theory Behind Application of Practical Skills	Student unable to identify and describe theories foundational to task/work.	Student is able to identify and describe theories related to task/work with limited effectiveness.	Student is able to identify and describe necessary theories related to task/work with minor assistance.	Student is able to identify and describe theories foundational to completion of task/work.	
Student Preparedness	Student did not have needed materials to perform work/task and therefore unable to perform work/task.	Student missing some of the needed materials to perform work/task.	Student gathered most materials but required minimal reminders/assistance.	Student gathered all materials and was completely ready to go to work.	
Level of Assistance Needed	Student unable to complete task/work.	Student able to complete the task/work with significant assistance.	Student able to complete the task/work with minimal assistance.	Student able to complete the task/work without assistance.	
Application of Safety Practices	Student did not follow safety rules/protocols.	Student needed occasional reminders to follow safety rules/protocols.	Student follows safety rules/ protocols but unable to explain purpose behind rules/protocols.	Student knowledgeable of and followed all safety rules and protocols.	

PLO #4: Design, implement, and assess food system solutions across scales. **(Problem-solving)**					**Threshold Values**
Indicators	Level 1	Level2	Level 3	Level 4	Upon program completion, 80% of students will meet or exceed Level 3 competency
Analysis of Information, Ideas, or Concepts	Identifies problem types	Focuses on difficult problems with persistence	Understands complexity of a problem	Provides logical interpretations of data	
Application of Information, Ideas, or Concepts	Uses standard solution methods	Provides a logical interpretation of the data	Employs creativity in search of a solution	Achieves clear, unambiguous conclusions from the data	
Synthesis	Identifies intermediate steps required that connects previous material	Recognizes and values alternative problem solving methods	Connects ideas or develops solutions in a clear coherent order	Develops multiple solutions, positions, or perspectives	
Evaluation	Check the solutions against the issue	Identifies what the final solution should determine	Recognizes hidden assumptions and implied premises	Evaluates premises, relevance to a conclusion and adequacy of support for conclusion.	

Part 5: Program Assessment Plan:

1) How will annual assessment be communicated to faculty within the department? How will faculty participating in the collecting of assessment data (student work/artifacts) be notified?

At the annual faculty meeting for the SFBS program, the SFBS Program Leader will outline which PLO's and associated artifacts will be included in the assessment for the upcoming academic year. The instructors for the courses that are part of the annual assessment schedule for that academic year will administer the artifact assignment. Samples of the completed artifact assignment will be distributed to two SFBS faculty (not course instructor) who will serve as "graders" for that year. Graders will also be identified at the annual faculty meeting. Graders will turn in their assessment grades to the SFBS Program Leader, and the data will be incorporated into the annual assessment report.

Also, the Program Assessment report from the previous year will be reviewed with all SFBS program faculty at the SFBS annual program meeting (September, annually).

2) When will the data be collected and reviewed, and by whom?

The data will be collected throughout the academic year, as the courses from which assessment data will be derived are offered either in Fall, Spring or Summer terms. The schedule of these target courses is as follows:

- SFBS146: Spring
- SFBS296: Summer
- SFBS466: Spring
- SFBS498: Summer
- SFBS499: Fall

3) Who will be responsible for the writing of the report?

The SFBS Program Leader will be responsible for the writing of the annual program assessment report.

4) How, when, and by whom, will the report be shared?

The annual program assessment report will be submitted to the Provost's office annually, no later than September 15th. The report will be shared with all SFBS program faculty during the annual program meeting (held annually in September).

5) How will past assessments be used to inform changes and improvements? (How will Closing the Loop be documented)?

During the annual SFBS program faculty meeting, a review of the program assessment report for the previous academic year will be discussed in detail. The discussion will focus on interpretation of the report results, in combination with other sources of data including student surveys from Capstone class, exit interview information from graduating seniors and alumni feedback. Faculty will then agree upon any actionable tasks for the next academic year that are realistic and tenable. For example, are curriculum changes needed (schedule of course offerings, addition or removal of courses from program of study, inclusion of specific courses across all program options, revision of course content or assignments, revisiting course prerequisites, inclusion of other courses in program assessment, changes in artifact assignments)? Are budgetary or resource allocation changes needed (increasing or decreasing class capacities, changes in course fee structure to support student learning)? Are changes to advising protocols needed?

Agreed upon changes will be documented by the Program Leader and included in the discussion of the subsequent program assessment report.

6) Other Comments:
The SFBS faculty contributing to this program assessment report represent four different departments at MSU. The interdisciplinary nature of the program combines rich content knowledge and varied pedagogical approaches. The SFBS program endeavors to be an excellent model of interdisciplinary program assessment that can inform future interdisciplinary academic programs at MSU. t

Submit report to programassessment@montana.edu