

Interdisciplinary B.S. Program in Plant, Soil and Entomological Sciences

PSES Outcomes

1. Broad knowledge of science, culture, arts and people to produce good citizens of the world..
2. Depth of discipline knowledge. Students in senior level capstone courses can demonstrate breadth and depth of knowledge of factual information in the discipline, understanding of concepts to use in term papers and oral exams.
3. Become life-long learners (learn to learn) to prepare graduates to succeed in the rapidly changing world.
4. Critical thinking skills to apply knowledge in personal and professional life.

Program :

Combined B.S. in Plant, Soil and Entomological Sciences – currently unnamed.

Essence Statement

Offer students interdisciplinary education in applied and basic ecology so as to feed and clothe people and understand and protect the environment.

Step 1: Essence of the Essence Statement:

We keep people from starving to death, naked in a degraded environment.

Step 2: Stakeholders:

1. Students. (Parents)
2. Agricultural industries.
 - a. Production Agriculture.
 - i. Growers, large-scale traditional, small-scale, organic
 - ii. Retailers of crop products
 - iii. Retailers of agricultural chemicals
 - iv. Retailers of food
 - b. Horticulture and Green Industries.
 - i. Producers, nurseries and greenhouses
 - ii. Retailers of plant materials
 - iii. Retailers of horticultural chemicals
3. State Dept. of Agriculture
4. Environmental groups and agencies.
 - i. Nat. Resources Conservation Service
 - ii. Consulting firms
 - iii. The Nature Conservancy, etc.
 - iv. Dept of Environmental Quality
5. General public.
6. College administration
7. University administration
8. State Board of Education
9. Professional societies

Step 3: Boundaries:

What it is:

We foster environmental and ecological understanding and care.

We produce and protect food, fiber and esthetic crops.

We address plant, soil and entomological issues.

What it is not:

Sociology, economics, nutrition, animals, urban planning or design.

Step 4: Top 5 Current and Top 5 Future Goals:

Current Goals:

1. Develop an effective integrated ecologically based curriculum in plant, soil and entomological sciences.
 - a. Introductory courses to set context and introduce basic information.
 - b. Core of courses to establish common knowledge re: ecology, agricultural needs, environmental situation and needs.
 - c. Links to social considerations about the roles of science.
 - d. Capstone courses to ensure that students integrate diverse facets of their knowledge and can communicate this understanding.
 - e. Incorporate experiential learning into new curriculum.
 - f. Incorporate international experience into new curriculum
2. Faculty buy-in for new program.
3. Produce interdisciplinarily trained students with knowledge and skills in special emphasis areas. Broaden knowledge in basic and applied ecology.
4. Increase students' ability to apply factual knowledge and concepts, critical thinking.
5. Produce life-long learners, prepared for employment or graduate education.

Future Goals:

1. Assess the success of the integrated program.
2. Faculty satisfaction/growth from participating in the new program.
3. Increase graduate student teaching opportunities.
4. Increase undergraduate enrollment by 50%
5. Increase the number of faculty involved in the teaching program (hiring, redirection)

Step 5: Identify the top 5 products or assets of the current and future program.

Products:

1. Educated/graduated students.
2. Influence on non-majors – assure educated population that understands production and environmental issues.
3. Scholarship of teaching – innovative teaching, textbooks, sharing of teaching resources.
4. Coursework to support distance/web education.
- 5.

Assets:

1. Students.
2. Good teachers.
3. Teaching labs – plants, soils & entomology.
4. Good lecture rooms w/ multimedia.
5. Farms
6. Undergraduate/graduate student interaction.

- Limitations:
1. Equipment, aging and limited (microscopes, teaching materials)
 2. Too few laboratory classes (labor intensive, costly)
 3. Too few TA's (encourage teaching experience)

Step 6: Description of key processes, structures & systems associated with the program, which will help accomplish the current and future goals.

1. Plan new curriculum with input from students, stakeholders, faculty and College Administration.
2. Look at what other institutions are doing regarding this type of curriculum.
3. Determine employers' needs in future employees.
4. Ascertain future emphases within disciplines to guide preparation of grad students.
5. Get faculty buy-in and input.
6. Support faculty in efforts to develop courses and materials for new curriculum. (release time, short-term change of appointment, financial support for acquiring equipment, TA's)
7. Assess the interdisciplinary program with students, faculty, stakeholders, CALS administration for improvements.
8. Determine roles of key faculty in the new curriculum.
9. Reward faculty for commitment and contributions to new curriculum.
10. Revise departmental by-laws to give dept. faculty responsibility for integrated BS program.
11. Coordination and communication with biological sciences, CNR, WSU
12. Expand internship opportunities
13. Develop interdisciplinary and capstone course
14. Develop partnership with another group for external assessment of the program

Time and effort distribution- 10% planning: 85% doing: 5% assessing

Step 7: Write clear performance criteria that account for most of the quality of the program.

1. List characteristics/qualities (and values) which determine program quality.
 - a. Incoming student criteria
 - HS GPA, SAT/ACT scores, AP credits, experiential activities, demand for program

b. Midpoint criteria

Retention, rigor, communication skills, demonstration of higher level knowledge (including demonstration of interdisciplinary understanding), industry support, stakeholder support, grant dollars, collegiality and cooperation, respectful, learner centered atmosphere, good advising

c. Endpoint criteria

GPA, GRE scores, % in grad school, job placement (%), starting salary), advisor or employer assessment

This information is expanded below:

- a. Job placement of graduates (% and starting salaries, employers' assessment).
- b. Demand for program as measured by student enrollment.
- c. Measures of incoming students
 - ACT, SAT scores
 - High School GPAs
- d. Rigor of program.
 - high expectations.
 - Higher cognitive levels of learning.
 - Greater breadth of program.
- e. Good industry support
 - Measured by number of internships.
 - Measured by number and dollar value of scholarships available.
- f. Productivity and collegiality of faculty
- g. Measures of graduating students, GPA, GRE, soles test
- h Percentage that go on to grad school
- i. Grant dollars, publications, teaching evaluations, number of citations by others, teamwork.
- j. Retention rate and who drops out, best or poorest students

Examples:

- k. Incorporation of the 5 types of learning outcomes.
 1. Competencies – what people can do at what level.
 - Articulating your knowledge
 - Performance
 2. Movement – transferable skills, and movement from one level to next.
 3. Experience –
 4. Accomplishment – built a resume along the way.
 5. Integrated performance -
- l. Students with good communication skills.
 1. Clarity
 2. Grammatically correct.
 3. Meets needs of target audience.
 4. Meets cultural conditions.
 5. Engaging.

6. Accuracy
7. Significant impact.
8. Substantiates knowledge base.

2. Check w/ other stakeholders to determine if any key characteristics are missing.

We will use our departmental advisory board, discussions with internship supervisors, alumni and others to gather this data.

3. Rank the top 10 qualities for the future design of the program.

Demand for the program.

Job/grad school placement

Rigor (breadth, depth, interdisciplinary, integrated, communication skills)

Advisor/alumni/employer assessment

Quality of applicants- H.S. GPA, SAT, ACT scores.

Student retention.

Stakeholder support

Grant dollars for scholarships

Collegiality, respectful atmosphere

Faculty rewarded, meeting their intrinsic gratification

4. Select the critical areas for measuring; prioritize to just a few (7-10), consolidating highly related qualities.

See below

5. For each quality, identify a set of 3-5 important aspects.

- a. Demand for program by high quality students reflected by enrollment, retention, HS GPA, and SAT/ACT
- b. Rigor of the program as reflected by the breadth and depth of knowledge retained by students, students' ability to integrate interdisciplinary information and communicate their knowledge
- c. Stakeholder support: as demonstrated by financial support for scholarships, prospective employers making internships available, and expression of support to others to expand awareness of and support for PSES educational programs
- d. Collegial and respectful, learner centered atmosphere as demonstrated by faculty cooperation, faculty receiving intrinsic gratification, student evaluations and administrative assessment
- e. Job or grad school placement for graduates and advisor, employer and alumni assessment of quality of training received

6. Write statements illustrating the performance expectations that produce these qualities by describing the important aspect of the performance.
 - a. We expect that total enrollment will increase 10% within two years of establishing the program and increase by 50% within a decade.
 - b. We anticipate the mean HS GPA and standardized test scores for entering freshman to increase by 5% within a decade.
 - c. We expect student ability to integrate and communicate complex, interdisciplinary information to improve by 10% as assessed by term papers and oral exams in capstone courses.
 - d. We expect a 10% increase in donations to PSES scholarship funds within a decade.
 - e. We expect an increase in internship opportunities to match the increase in enrollment.
 - f. We expect >90% placement of graduates in jobs or graduate programs.
 - g. We expect positive assessment of alumni by 80% of employers or graduate advisors.
 - h. Improve responsiveness of department to stakeholders
 - i. Enhance interdisciplinarity
 - i. Integrative understanding of how disciplines interact
 - ii. Build on core knowledge of liberal arts, math and sciences
 - iii. Ability to apply knowledge in problem solving
 - iv. Communication in several disciplines and lay language
 - v. Ability to transfer knowledge to new contexts
 - j. Shared focus with autonomy
 - i. Faculty has shared focus and commitment to the program
 - ii. Faculty have autonomy to develop the process and assess necessities within their courses
 - iii. Faculty coordinate among courses to ensure integrated learning of students as determined by uniform end-point assessment criteria
 - k. We expect increased faculty satisfaction with their teaching responsibilities as demonstrated by teaching performance and assessed in discussions with instructors.
8. Identify three attributes (measurable characteristics) for each criterion

- a. Total enrollment
 - iv. Incoming student numbers
 - 1. Incoming Freshman
 - 2. Incoming transfer students
 - v. Percent retention
- b. Entering student quality assessments
 - i. HS GPA
 - ii. ACT/SAT scores
 - iii. AP credits
 - iv. Entrance essay (in dept. intro. course)
- c. Student ability to integrate and communicate complex interdisciplinary information
 - i. Number of papers written during program
 - ii. Capstone course term paper (compare to entrance essay)
 - iii. Number of oral presentations during program
 - iv. Oral presentations in capstone course
- d. Grow PSES scholarships
 - i. Number of donations
 - ii. Total dollars given
 - iii. Increased contact with stakeholders seeking funds
- e. Increase number and quality of internships
 - i. Number of internships
 - ii. Increased contact with stakeholders offering internships
 - iii. Survey students and employers re: quality of the experience
- f. Increase placement of graduates in grad school or good-paying jobs in their field
 - i. Percentage of graduates the enter grad studies (50%?)
 - ii. Job placement of graduates not going to grad school (90%?)
 - iii. Starting salaries of graduates
- g. Assessment by alumni, employers, grad advisors
 - i. Percentage of alumni responding that their education was good preparation for their current endeavor
 - ii. Percentage of employers responding
 - iii. Percentage of graduate advisors responding
- h. Improve responsiveness of department to stakeholders.
 - i. Client satisfaction
 - ii. Gather input on clients' future needs (Needs Analysis)
 - iii. Response time

- i. Enhance interdisciplinarity
 - i. enrollment in interdisciplinary capstone courses.
 - ii. Performance of students in oral and written communication regarding integrated topics.
 - iii. Number of faculty on grad committees outside of discipline.
 - iv. Number of recommended elective courses outside of the department.

- j. Shared focus with autonomy
 - i. Number of classes that are team taught.
 - ii. Demonstrated coordination among courses in the program (departmental curriculum committee) – Number of times individual faculty have met with their peers to discuss course content.
 - iii. Number of seminars/workshops on teamwork/indisciplinarity/team teaching offered/attended

Enrollment (Incoming)	Incoming student number	15%	Data from Registrar	Count	50	55	Recruiter
Enrollment (Incoming)	Student retention	5%	Data from Registrar	Calculate	80%	85%	Advisors
Student quality (Quality)	ACT/SAT score	5%	Test	ACT/SAT			Recruiter
Student integration and communication (Quality)	# and quality of papers/presentations in program	10%	Course requirements	Instructor assessment			Instructors in capstone courses
Student integration/communication	Quality of papers/presentations	10%					
Scholarships (Support)	Total \$	10%	Data from college	Calculate			Dept head
Internships (Support)	Total #	5%	Data from internship instructors	Count			Dept head, academic assistant, internship instructors
Placement (Outgoing)	Job/grad school placement %	10%	Data from advisors	Calculate			Advisors
Post graduate assessment (Outgoing)	Alumni/supervisor assessment	10%	Data from surveys	Analyze			Academic assistant
Responsiveness	Client satisfaction	5%					
Interdisciplinarity	Enrollment in interdisciplinary capstone courses	5%					
Interdisciplinarity (Quality)	# of outside recommended electives taken	10%	Data from advisors/study plans	Count			Dept. curriculum committee, advisors
Faculty shared focus (Support)	# of classes team taught	10%	Data from course list	Count			Dept head
Discipline knowledge (Quality)	Depth and breadth of knowledge	10%	Comprehensive exit exam, assessment, not for graduation	Instructor evaluation			Capstone course instructors

Enrollment 20%, Quality 35%, Outgoing 20%, Support 15%, Faculty and Staff 10%

Annual assessment report- page 38 in handout book

Cover

- Program title
- Slogan, catch phrase
- Year
- Key program contributors
- Images that display the program

One page for each criterion in table above

- Top 2 or 3 accomplishments with paragraph statements
- Top 10 other accomplishments with one sentence statements
- Additional efforts
- Planned activities for next year
- Strategic planning for next 3-5 years

One page on the assessment program and how you will improve it

Inside back cover

- Schedule of activities in the program for the next year

Back cover

- Contact information
- List of all program contributors