Student Learning Objectives

- PSIS graduates will have a strong background in those areas of applied biological sciences that are relevant to the discipline of their program selection.
- PSIS graduates will understand basic ecological principles pertaining to the interconnectedness of all natural ecosystems, as well as understand the impacts of human activities on the ecosystems that supply human society with critical goods and services.
- PSIS graduates will understand scientific methodology and how to apply the Scientific Method of investigation, hypothesis generation, and testing.
- PSIS graduates will demonstrate the ability to think clearly and creatively and to apply critical thinking skills when evaluating information.
- PSIS graduates will possess written and oral communication skills necessary to clearly present information to professional peers, constituents, and stakeholders within their disciplinary specialty.
- PSIS graduates will demonstrate mathematical skills sufficient to interpret and critically evaluate scientific information presented in the news and other reports published for general audiences.

Applied Biology and Biotechnology (ABB)

- ABB graduates will have a broad background in the fundamental concepts of both basic and applied biological sciences.
- ABB graduates must be able to form sound conclusions from the critical evaluation of empirical data. They must be able to distinguish beliefs and assumptions from conclusions that are legitimately based on demonstrable evidence and must understand how to apply the scientific method and its derivatives to arrive at such conclusions.
- ABB graduates will have knowledge and experience in the basic methods, instrumentation and quantitative analytical skills used to conduct scientific research in biological science.
- ABB graduates must possess critical thinking and communication skills, both oral and written, for purposes of conveying biological information to both professional scientists and the lay public.
- ABB graduates will demonstrate intellectual independence, scientific literacy and an appreciation for the connections between biological science and society.

Turfgrass Science and Management (TSM) and Horticulture (HORT)

- TSM and HORT graduates will have the ability to think clearly and creatively and to apply critical thinking skills when evaluating information within their disciplines.
- TSM and HORT graduates must demonstrate the application of scientific principles and problem solving skills relevant to turfgrass/horticulture.
- TSM and HORT graduates must possess knowledge and technical competence in multiple areas of turfgrass science/horticulture, including but not limited to: soil fertility and plant nutrition, plant identification, insect identification and management, chemical and biological analyses of soil and water; diagnosis of plant disease, stress, and injury, and basic practices of horticulture and agronomy.
- TSM and HORT graduates must demonstrate written and oral communication skills necessary to clearly present information to professional peers, constituents, and stakeholders within their disciplinary specialty.
- TSM and HORT graduates will demonstrate mathematical skills sufficient to problem solve and work effectively within their respective disciplines and sufficient to interpret and critically evaluate scientific information presented in the news and other reports published for general audiences.
- TSM and HORT graduates will have the knowledge and skills to locate information (from written, web-based, or other information sources), judge its efficacy and usefulness, and apply the information to crop management decisions.

Sustainable Food and Farming (SFF)

- SFF graduates must demonstrate a comprehension of agro-ecological principles and possess the appropriate knowledge of natural and applied sciences to be successful participants in sustainable food and farming professions.
• SFF graduates will demonstrate knowledge of community organizing strategies: working with coalitions, participating in community development or school gardening programs, evaluating community food systems and food security issues, as well as international agricultural development.
• SFF graduates will demonstrate critical thinking skills including analysis, reasoning, and questioning, including systems thinking skills and holistic decision making as well as the ability to evaluate research results.
• SFF graduates must possess excellent written and oral communication skills and math skills sufficient for employment as an agricultural professional, food systems specialist or as a candidate for admission to graduate study, depending on their self-identified track within the SFF program.
• SFF graduates will demonstrate an awareness of different worldviews, cultures, and learning styles.
• SFF graduates will demonstrate an ability to learn on their own, finding information from multiples sources and pursuing ideas in response to intellectual curiosity.
• SFF graduates will have had practical experience of agriculture through internships and hands-on coursework.

Assessment tools
• Indirect:
  o Extra questions on SRTI course evaluation forms for selected courses (planned).
  o In-house designed Junior Survey.
  o Input from industry/stakeholder groups.

• Direct:
  o Discipline-specific faculty panels for evaluation of written assignments and work products within capstone or key courses (planned).
  o Capstone courses planned for programs that do not currently have capstone courses.

Highlighted recent activities
• The Department has formulated a three-phase assessment plan, building upon a new curriculum which was approved by the Faculty Senate in April 2009.
  o Phase I (Summer 2009): Review course syllabi, determine content to be consolidated/repackaged, strengthen Core Courses; evaluate possibility of creating new Introductory Core Class in Applied Biology.
  o Phase II: Collection of student feedback, faculty assessment of student work and input from industry/stakeholder groups (see Assessment tools above, some data already routinely collected).
  o Phase III: Review of results by Undergraduate Curriculum Committee; to be repeated annually for three to five years to make recommendations for program modifications to better meet Student Learning Outcomes.