Botany Degree Program
Assessment of Learning Outcomes

Undergraduate Degree Program

Assessment Coordinator:
TBD

Degree Objectives:
BA Degree is designed to provide student flexibility in pursuing a broad liberal arts education while gaining a sound foundation in botany.

BS Degree is designed for students who plan a career in science with an emphasis in plants, especially those intending to pursue an advanced degree.

Expected Student Learning Outcomes for the Department of Botany
Students who have completed either undergraduate degree in Botany should be competent in the following areas:

1. Specific core discipline knowledge. Students should have learned core knowledge of the anatomy, morphology, systematics, genetics, physiology and ecology of marine and terrestrial plants, with particular emphasis on Hawaii’s unique flora and ecosystems.

2. Communication skills. Students should have learned to discuss and analyze problems using oral and written communication skills.

3. Problem solving and research skills. Students should have learned to make observations and collect data in laboratory and in field courses and to analyze these results, derive conclusions and report their findings.

Student Learning Outcome Assessment in the Department of Botany

1. Specific core discipline knowledge. Students will be continually assessed in their coursework from the time they first enter the program to the time they graduate. Additionally, an exit exam will be given to all graduating seniors to assess their mastery of their core knowledge. Each faculty member who teaches one of the required core courses will submit questions to be included in the exit exam. A similar exam will be administered to incoming Botany majors and the delta will be used as an estimate of program effectiveness.

2. Communication skills. Written and oral communication skills will be assessed in a senior seminar required of all senior students.

3. Problem solving and research skills. These skills will be assessed in a senior capstone course/seminar.

Department of Botany Program Assessment
Student feedback will be obtained in exit interviews and questionnaires concerning
learning outcome objectives, faculty advising, teaching and relevancy of courses in the required curriculum.
Assessment of Learning Outcomes in Advanced Botany Department Degree Programs

Assessment Coordinator: Graduate Chair Cliff Morden

Student Learning Outcomes for the Graduate Program, Department of Botany

In general, a student who has successfully completed the graduate degree requirements should be able to:

1. Demonstrate mastery of the methodology and techniques specific to the graduate track (subdiscipline of study) in our graduate program.
2. Communicate both orally and in writing at a high level of proficiency in the field of study.
3. Plan, conduct and analyze independent research.
4. Function as a professional in the discipline.

Masters Programs

Within Botany, the purpose of our two masters degrees is to rigorously train pre-doctoral students (Plan A) or to give those interested in Botany (but not a research career) an exposure to research and scientific method in a less intensive experience (Plan B). Both degree programs follow similar types of assessment, including:

- **Initial Screening** upon entering the program, by an interim committee
- **Knowledge Assessment** (examinations, theses, practicums and proposal seminar.)
- **Culminating Experience** (public defense of thesis)

PhD Program

The traditional concept of doctoral education is the one student - one professor - one research project model. We have recently adopted graduate programs that prepare students for a variety of roles and responsibilities, including the professorate, teaching, research and government posts. This involves providing students with opportunities to acquire other skills and experience in addition to research and scholarship. Each of our PhD tracks requires demonstration of proficiencies, including technical expertise in at least two track related skills.

There are three essential elements to our Ph.D. programs, each with its own type of assessment.

1. Pre Dissertation assessment
Initial screening for proficiency in botanical subdisciplines and core elements. Participation in the year long introductory graduate course: Fundamentals of Botany. a sequence of readings and critical discussion across all graduate tracks.

2. **Knowledge assessment** including performance in courses, comprehensive oral exam.

   Assessment of ability to plan scholarly activities, including a public proposal seminar.
   
   Dissertation research

3. **Final Assessment** - evaluation of the original scholarship including public defense in front of recognized scholars in the discipline.

   **Departmental expectations for a Ph D dissertation:**

   A. The doctoral dissertation should:
      
      i. reveal the student's ability to analyze, interpret and synthesize information;
      
      ii. demonstrate the student's knowledge of the literature relating to the project or at least acknowledge prior scholarship on which the dissertation is built;
      
      iii. describe the methods and procedures used;
         
         (1) present results in a sequential and logical manner; and
         
         (2) display the student's ability to discuss fully and coherently the meaning of the results. In the sciences the work must be described in sufficient detail to permit an independent investigator to replicate the results.

   B. The dissertation is the beginning of one's scholarly work, not its culmination. Dissertation research should provide students with hands-on, directed experience in the primary research methods of the discipline, and should prepare students for the type of research/scholarship that will be expected of them after they receive the Ph.D. degree.