**BOT Experiential Learning Activity**

Botany students are required to have an Experiential Learning Activity (ELA) that involves a hands-on experience working with plants or fungi and is a minimum of **60 hours** (equivalent to 2 credit hours).

**ELA Checklist**:

1. Identify an activity of interest that has a suitable ELA supervisor/mentor.
2. Fill out the ELA Agreement (p. 2-3) and have your supervisor sign.
3. Submit the form to your Botany advisor for approval before starting the ELA.
4. Conduct your ELA.
5. Upon completion, submit to your Botany advisor both a completed Performance Evaluation from your supervisor (p. 4) and a one to two-page reflection essay.

**ELA categories:**

1. Internships (volunteer, paid or credit [BOT 410])
2. Research experiences (volunteer, paid or credit [BOT 401, BOT 406])
3. Study Abroad
4. Student teaching
5. Service learning/community engagement

**Example activities:**

1. Field or lab research with university, government or approved private institution
2. Work in a lab, farm, botanical garden, conservation or wild-lands project
3. Botany teaching apprenticeship as a TA, school or camp instructor
4. Development of educational material for a public or private institution

**Talk to a Botany advisor to generate a list of potential ELAs.**

**General ELA learning outcomes:**

**1)** Apply knowledge of plants from coursework to real world challenges.

**2)** Develop your communication and collaboration skills.

**3)** Reflect upon your motivation for, interests in, and potential career paths.

**ELA Reflection Essay:**

The one to two-page essay should describe the main hands-on experiences of the ELA, any challenges or issues encountered that raised questions, which have solutions that are based on a knowledge of plants, and how the experience informs your thoughts on career paths. The essay should also reference relevant scientific literature and place the activity in a larger scientific and societal context. To facilitate essay writing, students are recommended to maintain a journal of their experiences. Students must work with the mentor to determine whether there are any features of the activity that must remain confidential. The reflection essay will be a basis for further professional skill development in BOT 411.

**Experiential Learning Activity (ELA) Agreement**

**Student:**

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Name OSU ID # Major

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**Supervisor:**

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Name and Title of Supervisor / Mentor Phone

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Mentor’s Signature Date E-mail

**Describe your proposed experiential learning activity and the skills and knowledge you expect to gain from the experience. Relate the skills and knowledge to either the general learning outcomes or two specific outcomes (see Appendix).**

Estimated hours of work/ week: \_\_\_\_\_\_\_\_\_\_\_ Number academic credits \_\_\_\_\_\_\_\_\_

\_\_\_\_Unpaid/Volunteer or \_\_\_\_\_ Paid Rate of pay: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Experiential Learning: Performance Evaluation** Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*Ratings: **E**xceeds expectation; **V**ery good; **G**ood; **N**eeds improvement

|  |  |  |
| --- | --- | --- |
| Evaluation Criteria | Ratings | Comments |
| **Use of scientific process/domain knowledge**: ability to learn and apply knowledge. |  |  |
| **Work quality:** accuracy and completeness of work, organization, and record keeping |  |  |
| **Critical thinking skills**: ability to assess problems, analyze information, develop solutions. |  |  |
| **Initiative and productivity:** motivation, resourcefulness, creativity, accomplishes work goals |  |  |
| **Dependability:** regularity in attendance, performing work, meeting deadlines |  |  |
| **Communication and cooperation:** effectiveness of oral and written communication; listening and interacting with others in a helpful and professional manner; seeks clarification when needed |  |  |
| **Professionalism and ethical behavior:** demonstrated honesty, integrity, and respect |  |  |

Additional Mentor Feedback:

**Appendix – Reference Information for completing the ELA Agreement**

**Key characteristics of a successful Experiential Learning Activity:**

1. *Authentic*: the student will relate the experience to real-world applications, problems or challenges.
2. *Reflection*: the student must transform the activity into a learning experience. Reflection starts at the onset, from identifying the intent of the experience to understanding preconceptions and how the experience may have changed those preconceptions.
3. *Improvement*: the student, via reflection and guidance from mentors, is expected to be involved in a feedback loop that increases their understanding of their chosen subject area as well as its place in the broader biological and human world.
4. *Assessment*: the EL activity must have learning outcomes and the student will be evaluated relative to the learning outcomes.

**Experiential Learning Activity – Possible Learning Outcomes**

To satisfy requirements for an experiential learning activity in the Botany program, intentional consideration of goals and expected outcomes must be clearly defined at the outset. The activity must involve reflection on the defined goals and expected outcomes, such that students improve their understanding of their chosen scientific field (e.g., plant biology) in a broader context, as well as improve their own potential for success in graduate school, professional school, or their chosen careers.

Participants in the initial intentional planning process may select from the following possible general learning outcomes of an EL activity. The mentor/supervisor can also develop specific learning outcomes, if appropriate.

Potential learning outcomes of an experiential learning experience.

* 1. Apply the process of scientific investigation in a real-world context.
	2. Apply critical thinking in a real-world context.
	3. Demonstrate effective communication:
		+ 1. verbal, and/or
			2. written.
	4. Demonstrate effectiveness in functioning within a team.
	5. Adhere to the standards of professionalism and ethical behavior (honesty and integrity):
		+ 1. in all stages of scientific practice to produce unbiased scientific knowledge,
			2. in all stages of teaching,
			3. in using proprietary information, and/or
			4. in exemplifying global citizenship.
	6. Apply the core concepts of the plant biological sciences to
		+ 1. scientific investigation,
			2. teaching, and/or
			3. service learning or community engagement.
	7. Use assessments to reflect on their own understanding of plant biology:
		+ 1. by their mentors (Internship/Research/Service learning),
			2. teachers (study abroad), and/or
			3. of their students’ learning (teaching).

The activity may also incorporate any of the learning outcomes specific to the Botany major:

**BOT1.** Demonstrate understanding of five core concepts in biology: evolution; pathways and transformations of energy and matter; information flow, exchange, and storage; structure and function; and biological systems.

**BOT2.** Use interdisciplinary approaches (e.g., applying chemistry and quantitative skills) to work on biological problems.

**BOT3.** Describe the complex networks of interactions that determine energy flow and the cycling of water, carbon, nitrogen, and minerals within ecosystems.

**BOT4.** Identify and analyze the anatomical and morphological features of plants and plant structures as they enable plant function and reveal plant evolutionary histories.

**BOT5.** Recognize and describe the features of vascular plant groups using standard botanical terminology. Interpret the evolutionary and phylogenetic relationships of plants by evaluating analytical and experimental tools used to understand organismal diversity.

**BOT6.** Incorporate information from physiology, genetics, developmental biology, biochemistry and genomics to explain how plants integrate water-relations, mineral and organic nutrition, solute transport, respiration and photosynthesis, hormonal and environmental signals to regulate the processes of growth and reproduction.

**BOT7.** Describe and implement laboratory methods typically used in plant biology.