

The Program Level Learning Outcomes for Botany undergraduate majors are:

- Communicate scientific concepts, experimental results and analytical arguments clearly and concisely verbally and in writing.
- Apply scientific methods, reasoning and appropriate mathematics to describe, explain and understand biological systems.
- 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.
- Use interdisciplinary approaches (applying chemistry and quantitative skills) to work on biological problems.
- Ecosystems are defined by complex networks of interactions that determine energy flow, and the cycling of water, carbon, nitrogen, and minerals.
- Identify and analyze the anatomical and morphological features of plants and plant structures as they enable plant function and reveal plant evolutionary histories.
- 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.
- 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.
- Describe and implement laboratory methods typically used in genome-enabled plant molecular and cellular biology studies.