



Student Learning Outcomes

College: Liberal Arts & Sciences

Department: Biology

Degree Program: Ph.D. in Biology

- 1) Develop skills to conduct independent research capable of generating multiple peer reviewed publications demonstrated through (holistic assessment will include assessment of):
 - a. Ability to survey scientific literature appropriate for the dissertation research topic
 - b. Ability to generate hypotheses and propose appropriate experimental design
 - c. Ability to formulate expected results and conclusion
 - d. Ability to propose appropriate statistical analyses
 - e. Ability to propose future research questions
- 2) Demonstrate depth of knowledge about the specific sub-discipline related to the dissertation research topic.
- 3) Demonstrate breadth of knowledge about general biological principles related to the core required courses:
 - a. Biochemistry
 - b. Cellular biology
 - c. Molecular biology
 - d. Hypothesis testing (i.e. statistics and experimental design)
- 4) Develop presentation and communication skills, as demonstrated by the ability to present a PowerPoint Presentation of the Dissertation Research Topic that (holistic assessment will include assessment of):
 - a. Provides sufficient background information to justify the proposed project.
 - b. Clearly presents testable hypotheses
 - c. Clearly present the proposed experimental design and statistical analyses
 - d. Clearly outlines the expected results and possible pitfalls to the proposed research
 - e. Provides an overall clearly conceived and designed dissertation project.