

UNIVERSITY OF CALIFORNIA, RIVERSIDE

Student Learning Outcomes for the B.A./B.S. in Biology

Students completing the B.A./B.S. major will be able to:

1. demonstrate a broad-based knowledge of Biology at multiple levels. Students are able to describe key concepts of molecular biology, cell biology, genetics, ecology, development, physiology and evolution. They can explain how structure dictates function, and how information flow occurs within cells and between generations. Students can integrate concepts through multiple disciplines and explain how genetics and environment determine phenotype.
2. utilize critical thinking skills. Students can formulate a hypothesis from which they can design an experiment to test it. They are able to obtain information from the scientific literature, other published materials and online content, judge the relative quality of these sources and can synthesize this information to extract overall meaning. They can critically evaluate the conclusions presented in published scientific papers. Critical thinking skills can be demonstrated in a laboratory setting.
3. communicate scientific ideas clearly. They can write a synthetic paper based on citations from the scientific literature and are able to summarize scientific information to a lay audience. They have passed at least one written research paper requirement in their junior or senior year.
4. employ analytical and computational skills. At the end of their Biology degree, students will be able to demonstrate skills that could be applied to their future careers.
5. apply laboratory and field skills. Students can perform skilled tasks appropriate to a laboratory and/or field environment. They can perform experiments described in laboratory protocols. They can demonstrate observational skills. They can operate basic biology laboratory equipment and explain the basis for their function. They can evaluate quantitative and qualitative experimental data. They can summarize biological concepts as models which can be used to make predictions. They can communicate research findings in laboratory reports.
6. use computational skills. Students are able to present and evaluate data in tabular or graphical form. They can analyze datasets and apply basic formulae to biological principles and analyze the results.

Program Website: <http://www.biology.ucr.edu/>