

UC San Diego - WASC Exhibit 7.1 Inventory of Educational Effectiveness Indicators

Academic Program	(2a) What are these learning outcomes? <u>Students graduating with a degree should be able to:</u>	(3) Other than GPA, what data/evidence are used to determine that graduates have achieved stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)?	(4) Who interprets the evidence? What is the process?	(5) How are the findings used?
Department: Major: Biological Sciences (all) (1) Have formal learning outcomes been developed? Yes (6) Date of the last Academic Senate Review? 2014-15 Please date the form	<p>Communication</p> <p>Clearly communicate biological concepts regarding the evolution and diversity of living organisms; heredity and its molecular basis; the correlation of biological structure, function and processes at all levels of biological organization; how energy, nutrients, metabolites and information are acquired and organized and how they flow through biological systems; biotic interactions and the relationship of organisms to their physical environment; and additional or more in-depth concepts depending on the major.</p>	<p>Written Communication</p> <p>Short or essay answers on exams; lab reports (lab classes); research reports written for independent studies (BISP 196/197/199); contributions to student publication Saltman Quarterly. Last two items are not required, but many students participate.</p> <p>Oral Communication</p> <p>Oral contributions (answering questions, contribution to discussion) in discussion and lab sections; literature presentations in senior seminars (BIXX 194) and certain other classes; research or research proposal presentations in lab classes, independent studies (BISP 196/197/199), and at the annual undergraduate Divisional Research Showcase; apprentice teaching via enrollment in BISP 195. Most of these are not required, but a large proportion of students participate in one or more of them.</p>	<p>Written Communication</p> <p>Instructors, instructional assistants, research mentors, poster judges, and faculty advisors of SQ evaluate student writing.</p> <p>Oral Communication</p> <p>Instructors, instructional assistants, research mentors, and poster judges evaluate student presentations. Feedback to instructional assistants (students enrolled in BISP 195) is also provided by students via the online IA evaluation system.</p>	<p>Written Communication</p> <p>Feedback from all evaluators is given to students to improve their writing. Instructional and mentoring practices and individual assignments are modified to be more effective.</p> <p>Oral Communication</p> <p>All evaluators provide feedback to students to help them improve their oral communication skills. Instructional and mentoring practices, and individual assignments, are modified to be more effective.</p>
	<p>Quantitative Reasoning:</p> <p>Learn calculus and statistical methods; apply these and other quantitative methods to analyze biological systems and data from experiments investigating these systems; draw appropriate conclusions from these analyses.</p>	<p>Quantitative Reasoning</p> <p>Answers to exam questions requiring quantitative reasoning or problem solving in many classes required for the major; performance on project tasks requiring quantitative reasoning and analytical skill; lab and research reports/presentations employing quantitative analysis.</p>	<p>Quantitative Reasoning</p> <p>Instructors, instructional assistants, research mentors, and poster judges evaluate student work and thought processes.</p>	<p>Quantitative Reasoning</p> <p>Faculty continually revise teaching practices and research mentoring strategies based on assessment of student achievement; Education Committee revises requirements and commissions new courses strengthening our curriculum in this area.</p>
	<p>Information Literacy</p> <p>Evaluate the credibility and value of information acquired from many different sources; use digital technologies to search the scientific literature, and to retrieve and analyze information from reliable databases.</p>	<p>Information Literacy</p> <p>Oral and written presentations requiring reference to published information in lecture classes, lab classes and senior seminars (BIXX 194); research reports presented in independent study courses (BISP 196/197/199) and the annual undergraduate Divisional Research Showcase; articles written for Saltman Quarterly. Most of these activities are not required for all students but many students participate.</p>	<p>Information Literacy</p> <p>Instructors, instructional assistants, research mentors, and poster judges evaluate and critique student use of published information.</p>	<p>Information Literacy</p> <p>All evaluators continually revise their practices to improve guidance given to students in this area.</p>

	<p>Critical Thinking Construct reasonable hypotheses to explain biological phenomena; design effective experiments to test hypotheses and draw appropriate conclusions based on evidence; recognize the interactions between biology and society, the impact of biological discoveries on society, the long-term and ethical implications of biological discoveries, and the impact of social context on scientific progress; habitually analyze everyday events using principles of scientific enquiry.</p>	<p>Critical Thinking Written assignments and contributions to discussion occurring in lecture classes (including several explicitly investigating science-society or environment connections), lab classes, senior seminars and independent studies. Not all of these are required for all students but many participate.</p>	<p>Critical Thinking Instructors, instructional assistants, and research mentors evaluate written and oral statements, engage students in discussions of hypotheses, conclusions and the reasons for them, and discussions about the impact of science on society and the environment.</p>	<p>Critical Thinking All evaluators continually revise their practices to improve student habits and awareness of these goals.</p>
	<p>All other items not color coded</p>	<p>All other items not color coded</p>	<p>All other items not color coded</p>	<p>All other items not color coded</p>
	<p>(2b) Where are the learning outcomes published? Please provide your department/program website address.</p>			