

## BIOLOGY DEPARTMENT ASSESSMENT OF PROGRAM OBJECTIVES AND STUDENT OUTCOMES.

Academic Student Learning Outcomes	
<b>Upon successful completion of any program at SLCC, students:</b>	
<b>1. Acquire substantive knowledge in the discipline of their choice sufficient for further study, and/or demonstrate competencies required by employers to be hired and succeed in the workplace.</b>	
<b>2. Communicate effectively.</b>	
<b>3. Develop quantitative literacies necessary for their chosen field of study.</b>	
<b>4. Think Critically.</b>	
<b>5. Develop the knowledge and skills to be civically engaged, and/or to work with others in a professional and constructive manner.</b>	

<u>ASLO</u>	<u>Program Objectives/Student Outcomes</u>	<u>Program Assessments</u>
1,3,4	Students will gain a complete understanding of the method and practice of science.	To measure program effectiveness for this objective, department faculty and laboratory instructors will use assessment methods selected from, but not limited to: 1. Laboratory written reports and/or homework problems, demonstrating proper use of the scientific method and experimental design. 2. Laboratory data sheets and/or homework problems demonstrating proper recording and analysis of experimental data. 3. Quizzes and exams that include knowledge, data analysis, and/or conceptual questions about the history and practice of science 4. Research papers or group projects demonstrating the application of scientific practices to "real world" issues.
1,3,4	Students will gain a solid foundation of knowledge in the biological sciences.	To measure program effectiveness in increasing student understanding of the three main tenets of Biology(the Principle of Evolution, the Cell Theory and the Laws of Inheritance), department faculty and laboratory instructors will use assessment methods selected from, but not limited to: 1. Quizzes and exams that include questions at both the knowledge and the conceptual/analytical level. 2. Homework assignments and/or laboratory exercises that require the students to demonstrate basic science knowledge. 3. Written papers and/or group projects demonstrating the application of current science knowledge to current events. 4. Class reports and opinion papers indicating an understanding of the cellular basis of biology, the basic inheritance mechanisms, and the process of evolution.
1,4,5	Majors will be prepared to further their education in the biological sciences.	To measure program effectiveness in preparing students to further their education in the biological sciences,

		<p>department faculty and laboratory instructors will use assessment methods selected from, but not limited to:</p> <ol style="list-style-type: none"> <li>1. Comprehensive examinations at the end of each course.</li> <li>2. Assessment examinations at the beginning of courses requiring prerequisites.</li> <li>3. Nationally developed examinations (HAPS) for specific topics such as anatomy and physiology</li> <li>4. When feasible, faculty and staff will monitor the number and academic performance of students transferring to other programs and/or institutions.</li> </ol>
1,3,4	Students will apply the technical and analytical skills used in modern biological research.	<p>To measure program effectiveness in providing students with technical and analytical skills, department faculty and laboratory instructors will use assessment methods selected from, but not limited to:</p> <ol style="list-style-type: none"> <li>1. Laboratory written reports, demonstrating proper understanding of scientific instrumentation and measuring techniques.</li> <li>2. Laboratory data sheets demonstrating proper recording, calculations, and analysis of experimental data.</li> <li>3. Quizzes and exams that include data analysis and/or conceptual questions about scientific instrumentation and data management.</li> <li>4. Homework assignments requiring students to perform experimental procedures and data analysis from computer simulations or other data sets.</li> <li>5. Research papers and/or group projects demonstrating the application of scientific practices to “real world” issues.</li> <li>6. Computer simulation projects that require students to collect, organize, and analyze data.</li> </ol> <p>To measure program effectiveness in training students to access and critically evaluate information, department faculty and laboratory instructors will use assessment methods selected from, but not limited to:</p> <ol style="list-style-type: none"> <li>1. Quizzes and exams that demonstrate student ability to differentiate science “myths” from accepted science theories. These will range from short response to multiple choice to problem solving questions.</li> <li>2. Homework assignments that require students to report on information from the textbook, library resources, computer database resources, or other accepted and reliable sources of scientific information.</li> <li>3. Research papers and/or group projects demonstrating the critical assessment of scientific practices applied to “current events”.</li> <li>4. Classroom discussions demonstrating students have internalized and can verbalize their understanding (or even misunderstanding) of concepts</li> </ol>
2,4	Students will be able to access and critically evaluate information in biology.	