AMERICAN UNIVERSITY
WASHINGTON, D C

Biology (B.S.)

Department Website: http://www.american.edu/cas/biology/

1. Learning Outcomes

1. Students will be able to apply information from core subjects in the biological sciences, including cell biology, genetics, and evolution.
2. Students will be able to effectively communicate scientific ideas in both written and oral formats.
3. Students will be able to demonstrate the scientific method through the use of hypothesis testing in the design and implementation of an experiment.
4. Students will demonstrate informational literacy by having the ability and skills to effectively and legitimately use various sources of information required for functioning in a global, information society.
5. Students will be able to critically analyze primary scientific literature.
6. Students will demonstrate that they can perform a set of basic laboratory skills.

2. Assessment Plan

Measures	Target	Learning Outcome(s)	Cycle and Reviewers
Series of questions, including fact-based, synthesis and critical analysis questions, imbedded in final exams of courses that cover core subject areas; cell theory, evolution and genetics.	80% of students in upper level course will score good or excellent on questions	1	Core courses are covered in a variety of classes therefore specific classes utilized for this assessment will vary depending upon what is offered in that year. Faculty teaching the courses will comprise the assessment committee for this endeavor. They will report their findings to the departmental Assessment Director. This Outcome will be assessed on an *ad hoc* basis, at least once during the next six years.
2.1 Effective communication (written): Random selection of lab reports from introductory and upper level courses	80% of students in upper level course will score good or excellent in all aspects of rubric	2	Faculty teaching lab-based courses will comprise the assessment committee for this endeavor. They will report their findings to the departmental assessment director. This assessment will occur once every six years; introductory reports assessed in 2009; upper reports next assessed in AY 2010/2011.
2.2 Effective communication (oral): Random selection of 10 end-of-term oral presentations	80% of students in upper level course will score good or	2	Faculty teaching upper level courses will comprise the assessment committee for this

(accounting for at least 15% of the students' final grade) from at least two upper level classes.	excellent in all aspects of rubric		endeavor. They will report their findings to the departmental assessment director. Given strong indicators of success for this skill during the 2004 assessment this objective will be reassessed in 2012/13.
Scientific method: Material produced by students in classes: • Questions on end-of-term introductory course exam • Early lab reports • Assignment in upper level courses requiring students to formulate a hypothesis and design an experiment to test their hypothesis, including appropriate controls.	80% of students can successfully define and apply the scientific method	3	Faculty who teach one of these courses in the year this objective is being assessed will comprise the assessment committee for this endeavor. They will collect and analyze their data and then report their findings to the departmental assessment director. This assessment will occur at least once every six years, beginning in AY 2009/2010.
Informational Literacy: Existing assignments in upper level courses that require significant amount of primary research for their completion. Insert additional requirement on existing project rubrics.	Students will be able to articulate how they would obtain copies of 90% of references outlined by the instructors in a timely manner.	4	Faculty who teach one of these courses in the year this objective is being assessed will comprise the assessment committee for this endeavor. They will collect and analyze their data and then report their findings to the departmental assessment director. This Outcome will be assessed on an *ad hoc* basis, at least once during six years.

Critique primary literature: Students will present a critical analysis of a primary scientific journal article of their own choosing in an upper level course.	80% of students will score good or excellent on the rubric.	5	Rubric scores will determine how well this outcome is met. Three faculty teaching upper level courses will comprise the assessment committee for this endeavor. They will collect and analyze their data and then report their findings to the departmental assessment director. This assessment will be completed once every six years, beginning in AY 2011/2012.
Basic lab skills: Performance on laboratory practical exams and quizzes. Knowledge of:: • Knowledge of safety protocols and equipment • Effective use of a pipet and micropipetter; accurate pipetting • Ability to use a spectrophotometer • Exhibit successful sterile technique • Ability to use a key to identify organisms Ability to interpret results represented in tables and graphs	All students will show proficiency in all foundational laboratory skills	6	Proficiency will be assessed during laboratory sessions. Faculty teaching these courses will comprise the assessment committee for this endeavor. They will collect and analyze their data and then report their findings to the departmental assessment director. This assessment will be completed once every six years, next assessed in AY2008/09.