

Department of Natural and Physical Sciences Mission

The Department of Natural and Physical Sciences has the mission of providing the knowledge, practical and theoretical skills and abilities for the further education and successful employment of our students. We prepare students to be lifelong learners as scientists, teachers, researchers, health care professionals, as well as users and developers of technology. Our graduates will be inquisitive critical thinkers who are articulate, literate and committed to action in their global community.

Biology Program Mission

The mission of the Biology program is to educate students to think critically, analytically and creatively in the biological sciences. Ethical and civic responsibilities will be stressed to preserve the aesthetics of the natural world. Students will be technologically and intellectually prepared to pursue graduate and/or professional education and a successful career.

Chemistry Program Mission

The mission of the chemistry program is to provide students with the knowledge and skills in laboratory and in theory in order to communicate technical information in written and verbal form. Students will be able to think critically, analytically, ethically and be problem solvers in real life situations. Chemistry students will be able to go on for further education and successfully find suitable careers.

Geography Program Mission

The mission of the Geography program is to educate students to think critically, analytically and creatively in the geographical sciences. Ethical and civic responsibilities will be stressed to promote students' understanding and awareness of the diversity of the world. Students will be technologically and intellectually prepared for higher and/or professional education and to have a successful career.

Natural Science Program Mission

The mission of the Natural Science program is to educate students to think critically, analytically and creatively in the natural sciences. Ethical and civic responsibilities will be stressed to conserve the aesthetics of the natural world. Students will be technologically and intellectually prepared to pursue graduate and/or professional education and a successful career.

Biology Program Assessment Plan: 2006-2007

Department of Natural and Physical Sciences

College of Liberal Arts and Sciences

Park University

Introduction

The Biology Program at Park University is firmly committed to the goals of Excellence and Internationalization set forth in the University's Strategic Plan, Explorations and Transformations 2012. The Department's goal is to continue its development of high quality instructional programs in the biological sciences, and in so doing make important contributions to the dynamic and rapidly progressing field of biology, to higher education in the Park University, and to the community at large. The Biology curriculum allows for exposure to the diverse fields of biology. Biological concepts rely on the basic principles of physical science and therefore course work in physics and chemistry is included in the program requirements.

The Assessment Plan for the Biology Program is based on the University, College of Liberal Arts and Sciences, and Department of Natural and Physical Sciences mission and vision statements, as well as the Biology mission statement and program competencies. Consistent with those mission statements, the Biology Program will offer a liberal education to its students. It is the intent of the Biology Program to be of assistance in fulfilling all these mission statements by providing students with an awareness and comprehension of important cultural, economic, and environmental issues of concern to local, national, and global communities.

Foundations of the Plan

The Biology Program Assessment Plan at Park University was established by a collaborative process of faculty within the Biology Program and is based on the following principles:

A. Flows from the institution's mission:

University Mission Statement:

The mission of Park University, an entrepreneurial institution of learning, is to provide access to academic excellence which will prepare learners to think critically, communicate effectively and engage in lifelong learning while serving a global community.

College of Liberal Arts and Sciences Mission Statement:

The College of Liberal Arts & Sciences of Park University will prepare graduates who are articulate, literate, reflective, lifelong learners and active global citizens.

Biology Program Mission Statement:

The mission of the Biology program is to educate students to think critically, analytically and creatively in the biological sciences. Ethical and civic responsibilities will be stressed to preserve the aesthetics of the natural world. Students will be technologically and intellectually prepared to pursue graduate and/or professional education and a successful career.

B. Has a conceptual framework:

The conceptual framework of the Biology Program is demonstrated in the holistic perspective and approach it expects from the majors. Whether it is general, cellular and molecular, organismal, ecological, or pre-professional, the graduate would be able to critically think and communicate in biological terms and the program assessment is designed to evaluate a senior's knowledge of these five general areas.

C. Has faculty ownership/responsibility:

The Biology faculty, in collaboration with various colleagues in College of Liberal Arts and Sciences, developed the assessment plan. It has and will evolve as experience and need demands it. The most current version will always be placed on the Assessment website and Biology website after final approval of the University Assessment Committee.

D. Has institution-wide support:

Biology faculty view the assessment plan as approved only after it has received institution-wide support. That support typically consists of, but is not limited to, the Department of Natural and Physical Sciences, the Council of Chairs, the Dean for the College of Liberal Arts and Sciences, the University Assessment Committee, and the Provost.

E. Uses multiple measures:

The required Senior Exit Exam will provide a measure of evaluation of the five program competencies. Other measures of assessment will provide additional measures.

F. Provides feedback to students, faculty and the larger institution:

Feedback to students through:

- Graded assignments and exams
- Course grade

Feedback to faculty through:

- Course evaluations
- Senior Exit Exam

Feedback to the university through:

- Course evaluations
- Senior Exit Exam
- Annual Assessment Report

G. Does not restrict or inhabit goals of access, equity, and diversity established by the institution:

The Biology Program assessment plan is designed to affirm the faculty's desire to educate others about gender roles, diversity, and internationalization.

I. Leads to improvement:

The purpose of the assessment is to distinguish areas of strength and areas of improvement. Assessment tools are evaluated at least annually to permit for change and improvement.

Outcomes of the Senior Exam Exams are evaluated as they become available each year. The development of this assessment plan has already resulted in curricular changes for the program.

J. Includes a process for evaluating the assessment program:

Assessment tools are evaluated to conclude if they are providing the information required. Student and faculty feedback assists in determining the effectiveness of the Assessment Plan, as well as the overall effectiveness of the program. Modifications are made as evaluation indicates. Review of instruments is continual to acknowledge necessary refinement of the program as well as assessment measures.

Measures of Assessment

The Biology Program curriculum contains five core classes (BI 114, BI 225, BI 226, BI 231, BI 326). Students are required to complete a Core Assessment (research paper, exams, etc.) for each of these courses, which in turn, serve as the foundation for the students' Senior Exit Exam. Evaluation of the Senior Exit Exam serves as the principle measure of the program's overall effectiveness.

The Biology Program is evaluated both quantitatively and qualitatively. Each student, major and non-major, has the opportunity to evaluate each course at the conclusion of the term/semester. The results are returned to the instructor and are accessible to the program coordinator, department chair, and Dean, College of Liberal Arts and Sciences and eventually become part of the data collection for course/program review and curricular changes.

There are numerous measures of assessment that unify each Biology course to the overall program outcomes and to the University Mission and Vision Statements, and the Program Mission Statement. These measures validate that the assessment of program graduates accurately exhibits their competence in the assorted standards and competencies.

The **course** assessment measures include, but are not limited to:

Papers Quizzes Projects Oral presentations Examinations

The **program** assessment measures include:

Certain key course core assessments and the Senior Exit Exam

Annual Review of Assessment

Biology Program faculty members will review the results of the Senior Exit Exam annually and submit a written report of their findings and any associated program changes it intends to make as a result to the University Assessment Committee.

Program Competencies

<i>Program Competency</i>		
<i>Program Competency #1</i>	<i>Course(s) in which Program Competency is covered</i>	<i>Assessment Instrument(s) and Setting used to assess the Program Competency</i>
Students will demonstrate knowledge and comprehension of basic biological principles, concepts and theories.	1. BI 114, 2. BI 225, 3. BI 226, 4. BI 231	Senior Exit Exam
<i>Program Competency #2</i>	<i>Course(s) in which Program Competency is covered</i>	<i>Assessment Instrument(s) and Setting used to assess the Program Competency</i>
Students will perform literary research and communicate effectively in a variety of methods including written papers, as well as oral and poster presentations. Students must also be proficient in the use of modern technologies that facilitate communication.	1. BI 306 2. NS 401	1. BI 306— Core Assessment-Research proposal 2. NS 401—Core Assessment-oral presentation
<i>Program Competency #3</i>	<i>Course(s) in which Program Competency is covered</i>	<i>Assessment Instrument(s) and Setting used to assess the Program Competency</i>
Students will use major research methodologies, use current technologies in the discipline.	1. BI 225, 2. BI 306	1. BI 225 Lab Activity Report 2. BI 306— Core Assessment-Research proposal
<i>Program Competency #4</i>	<i>Course(s) in which Program Competency is covered</i>	<i>Assessment Instrument(s) and Setting used to assess the Program Competency</i>
Students will evaluate and integrate the major biological concepts and theories.	BI 326 BI 114, BI 225, BI 226, BI 231	Senior Exit Exam
<i>Program Competency #5</i>	<i>Course(s) in which Program Competency is covered</i>	<i>Assessment Instrument(s) and Setting used to assess the Program Competency</i>
Students will debate and discuss civic and ethical responsibilities as both individuals and scientists.	1. BI 326,	1. BI 326---Core Assessment-Term paper, 2. Senior Exit exam

School of Natural and Applied Sciences Biology

BACHELOR OF ARTS / BACHELOR OF SCIENCE

Core Curriculum: (Required for both majors)

		B.A.	B.S.
BI 114	Human Biology	4 cr	4 cr
BI 225	Botany	4 cr	4 cr
BI 226	Zoology	4 cr	4 cr
BI 231	Introductory Cell & Molecular	3 cr	3 cr
BI 306	Biological Literature	3 cr	3 cr
BI 326	Ethics in Science	3 cr	3 cr
		21 cr	21 cr

BI Electives (From approved list)..... 12cr 14 cr

BI 300	Evolution (3 cr)		
BI 320	Genetics (4 cr)		
BI 330	Paleobiology (4 cr)		
BI 337	Biochemistry (3 cr)		
BI 337L	Biochemistry Lab (1 cr)		
BI 340	Comparative Anatomy (4 cr)		
BI 344	Animal Physiology (4 cr)		
BI 350	Microbiology (4 cr)		
BI 360	Cell Biology (4 cr)		
BI 378	Ecology (4 cr)		
BI 417	Developmental Biology (4 cr)		
BI 422	Individual Research (1-3 cr)		
BI 470	Internship in Biology (1-4 cr)		
BI 490	Advanced Topics in Biology (1-4 cr)		
GGP 365	Geography of Disease (3 cr)		
GGP 370	Biogeography (3 cr)		
NS 2XX	Applied Statistics and Experimental Design	3 cr	3 cr
NS 401	Natural Science Seminar	2 cr	2 cr
BI 4XX	Senior Research	3 cr	3 cr
CH 107	Chemistry I	4 cr	4 cr
CH 108	Chemistry II	4 cr	4 cr
PY 155	Physics I		5 cr
PY 156	Physics II		5 cr
TOTAL		49cr	61 cr