Biology Program Assessment Plan

Our Vision

The Center for Math & Science is a world-class center teaching our students how to use knowledge in the areas of Science, Technology, Engineering, and Mathematics (STEM) for ongoing participation in the workforce, transfer studies, and the world at large.

Our Mission

CCD's Center for Math & Science prepares intellectually confident students to apply STEM concepts in the global community. We provide a rich academic foundation in a supportive setting, including accessible, highly qualified faculty and state of the art learning environments. Rigorous, affordable, convenient: start here to go anywhere.

The Biology Department Program goal is to produce science graduates who have a comprehensive understanding of the following skill sets; academic behavior and values, as well as with proficiency in the following scientific concepts:

Academic Behaviors and Values Skill Sets

- Critical thinking and problem solving skills through the scientific method
- Leadership skills
- Awareness of ethical and global implications in science

The Community College of Denver's science faculty are committed to understand the idea of assessment and will participate in the following activities:

- College wide Assessment training and understanding the importance of assessment to the health of the college
- Improved teaching /learning methods by attending department, college, and regional meetings
- Ability to teach up-to-date courses
- Potential to publish assessment outcomes (data sets)

Biology Department Assessment Exam

- Pre/Post Biology Exams

Biology Department Program Outcomes

Program Goals

The main goal of the CCD Biology Department is to create scientifically literate science students who have the ability to analyze and apply science principles to the world around them.

I. Program Learning Outcomes: General Education Requirements

- Develop a working understanding of the Biological Levels of Organization.
- The ability to apply scientific technology and the scientific method to solve problems
- The ability to process scientific issues and apply these concepts to global issues
- Numerical Knowledge and Skills: Students will use appropriate math and statistical concepts to interpret scientific data sets

- Computer literacy, scientific problem solving, math reasoning skills, critical thinking, ability to judge scientific validity, able to write and speak effectively.
- Up-to- date knowledge of scientific technology and issues
- Develop Scientific Ethical values
- Undergraduate Research experience and skill

Biology Department Student Learning Objectives

1. Apply concepts and terminology in molecular, cellular, organismal, and ecological biology

2. Interpret scientific literature and present a synthesis of it accurately in oral and written form

3. Demonstrate Teamwork/Leadership skills

4. Recognize the relationship between structure and function at all levels: molecular, cellular and organismal

5. Demonstrate critical thinking and problem solving skills using experimental design and the scientific method

6. Demonstrate ethical conduct in scientific activities

Assessment Timeline

Assessment Process	What	Who will conduct it?	When
Preparation	Discuss and Complete Assessment Report(PLSOs)	All Full time Faculty	First Year
Data Collection	Pre/Post Biology Exam	All Biology Faculty	Every semester
Analysis	Pre/Post Biology Exam	Department Chair and full time faculty	Three times a year
Reporting/Use	Program Review of Pre/Post Exam questions. Departmental Discussion and review of exam results. Revise exam and Assessment PSLOs	Department Chair Full time faculty Full time faculty	Three times a year Three times a year Once a year

Biology Department Student Learning Assessment Plan

The Biology Departmental Assessment Plan has been designed to evaluate how the Science curriculum, research and other activities complement each other to achieve the graduating student skills and knowledge.

Biology Core Courses Student Learning Outcomes

Program Student Learning Objective (PSLO)	Biology Core Course I=Introduction D=Demonstrate M=Mastery	Methodology Pre/Post Test Question (s)	N Number of students assessed	History Number of years this outcome has been assessed
Recognize the relationship between structure and function at all levels: chemical, molecular, cellular and organismal Describe the levels of organization of life	BIO 111-I BIO 112 –D BIO 201-D BIO 202-M BIO 204-M	2,3,5,11,12,20,21,22,23		
Apply concepts and terminology in molecular, cellular, organismal, and ecological biology	BIO 111-I BIO 112 –D BIO 201-D BIO 202-M BIO 204-M	4,13,14,15,16,17,18, 25		
Interpret scientific literature and present a synthesis of it accurately in oral and written form Describe the general process of the scientific method	BIO 111-I BIO 112 –D BIO 201-D BIO 202-M BIO 204-M	1,9,10		
Explain the basic characteristics that are common to all living organisms. Explain why the study of evolution is important in understanding life.	BIO 111-I BIO 112 –D BIO 201-D BIO 202-M BIO 204-M	6,7,8,19,24		