

Columbia University
Student Learning Outcomes Assessment
Information for Developing Program Plans

Introduction

Student learning outcomes assessment is the process of collecting information to demonstrate that, at graduation, students of an academic unit have knowledge, skills, and competencies consistent with the mission and goals set by that academic unit.

Assessment needs to take place at different levels of an academic institution, i.e., a university, a college or school, a department, and an academic program, because it tells each academic unit whether the educational experiences it offers or oversees are having the desired impact on those it educates. At each level, the clear purpose of the process is to use the results to improve teaching and learning.

At the current stage of development, Columbia University's plans for measuring student learning outcomes will focus on the most basic academic unit – the academic program.

Planning Process for Student Learning Outcomes Assessment

The planning process for student learning outcomes assessment consists of four major steps:

1. Define the educational mission of the academic program, with a focus on what the degree program is intended to accomplish in terms of student learning.
2. State the specific goals the program has set for its students. These goals should describe significant and essential knowledge and skills that students are expected to achieve and demonstrate by the end of the program.
3. Specify how the achievement of each of the student learning goals is measured, directly and/or indirectly.
4. Develop a plan for faculty to review the assessment results and use the information to affirm or improve the program.

Major Components of an Assessment Plan

The assessment plan for an academic program should include the following components:

1. Program Information

- Name of the Program
- Degree
- Department/Interdisciplinary Program
- College/School

2. Contact Person

- Name
- Title
- Email Address
- Phone

3. Program Mission Statement

In this section of its plan, state the educational mission of the program, with a focus on what the degree program is intended to accomplish in terms of student learning. This statement defines the program's purposes, principles, and values, and is more specific than the organizational mission for your department or school.

Format:

The mission of (*name of the program*) is to (*your primary purpose*) by providing (*your primary functions or activities*) to (*your stakeholders*). (*Clarifying statements should follow*).

4. Program Goals for Student Learning

Consistent with its mission statement, the academic program defines the specific learning goals it wants its students to achieve. These goals describe significant and essential knowledge and skills that students should have acquired and are able to demonstrate by the end of the program.

5. Measures of Learning Outcomes

For each of the learning goals as listed above, the program defines how it measures the students' level of success in achieving them. In general, there are two ways of measuring learning outcomes:

Direct Measures: Direct measures provide evidence of the increase in students' knowledge, skills, and abilities as a result of their study in the program.

Indirect Measures: Indirect measures ask students or someone else to reflect on the student learning rather than to demonstrate it, allowing us to infer the benefits to students from their years in the program.

Below are some examples of both direct and indirect measures. These are only suggestions to help the program's faculty think about the best way of measuring student learning. There may be other measures that are more appropriate to a specific program. The faculty need to decide what measures work the best to assess student learning outcomes in their own programs.

Examples of direct measures:

- Tests such as qualifying examinations and comprehensive examinations
- "Capstone" projects
- Portfolios of student work
- Student publications
- Presentations at real or mock conferences
- Preparation of proposals for external funding
- Student effectiveness in field assignments as measured by their supervisors using standardized criteria
- Feedback from computer simulated tasks designed to measure learning
- Scores on licensure or certification exams

Examples of indirect measures:

- Student surveys that ask about the quality of their education and the knowledge and skills they acquired
- Student course evaluations
- Student exit interviews
- Student focus groups
- Alumni surveys
- Student participation rates in faculty research and conferences
- Student honors and awards
- Career placement rates after graduation

- Admission rates to graduate or professional programs and quality of the institutions to which the students are admitted

6. Program Enhancement Based on Assessment Results

The program describes how it reviews the assessment results and uses the information collected through assessment to affirm or enhance the education it offers. This section

- Describes how data regarding student learning outcomes will be shared among program faculty;
- Describes how data collected through direct and indirect measures will be used to affirm or enhance the existing program;
- Specifies how recommendations will be reviewed and decisions made to affect student learning in the future; and
- Describes how changes in curriculum, pedagogy, or other aspects that affect learning will be documented.

Assessment Plan Template and Examples

We have attached a template designed for student learning outcomes assessment at the academic program level. We have also attached three hypothetical examples. Please note that the examples are taken from our peer institutions and modified for the purpose of illustrating the above guidelines for assessment planning.

Attachment I. Academic Program Assessment Template

Program Information	
Name of the Program: Degree: Department/Interdisciplinary Program: College/School:	
Contact Person	
Name: Title: Email Address: Phone:	
Program Mission Statement	
The mission of (<i>name of the program</i>) is to (<i>your primary purpose</i>) by providing (<i>your primary functions or activities</i>) to (<i>your stakeholders</i>). (<i>Clarifying statements should follow</i>).	
Program Goals for Student Learning	Measures of Learning Outcomes
Goal 1:	
Goal 2:	
Goal 3:	
Goal 4:	
Goal 5:	
Goal 6:	
Program Enhancement Based on Assessment Results	
Describe how the program will review the assessment results and use the information collected through assessment to affirm or enhance the education it offers.	

Attachment II. Hypothetical Example of B.A. in Classics

Program Information	
Name of the Program: Classics Degree: B.A. Department/Interdisciplinary Program: Classics College/School: Liberal Arts College	
Contact Person	
Name: Title: Email Address: Phone:	
Program Mission Statement	
<p>The mission of the B.A. program in Classics is to expose students to the cultures, history, languages, literatures, and material remains of the ancient Mediterranean world with particular emphasis on the civilizations of Greece and Rome and their reciprocal relations with surrounding Near Eastern, African, and European societies by providing students in the major with an enhanced appreciation of the classical past and the vital contributions of that past to Western cultural traditions. Specifically, the program is designed 1) to give students a deeper sense of historical and social perspective through a study of ancient languages and civilizations in preparation for a wide range of careers; 2) to prepare exceptional students for graduate level study and careers in teaching and research at the college/university level; 3) to nurture effective and empathetic teachers of Latin and Greek at the primary and secondary level; and 4) to provide students with an understanding of the kinds of issues, major approaches, methods, and skills needed to analyze the various aspects of classical (or any) civilization.</p>	
Program Goals for Student Learning	Measures of Learning Outcomes
Goal 1 - <i>Language Skills</i> : 1) in elementary language courses students will be able to analyze grammatical structure; to read,	Skills may be effectively assessed through embedded measures such as participation in class, performance on examinations, and

<p>understand, and translate appropriate Latin and Greek passages; and 2) in advanced language classes students will be able to call on these same skills as well as various skills of literary analysis and research.</p>	<p>on papers and research projects; the vertical nature of language study makes successes and failures apparent</p>
<p>Goal 2 - <i>Knowledge</i>: Students will be able to understand basic aspects of classical civilization appropriate to course -- historical outlines, the evolution of society, the development and functions of literary genres, architectural and artistic trends and their reflection of social values and ideology.</p>	<ol style="list-style-type: none"> 1) embedded measures such as participation in class, performance on examinations, and performance on papers and research projects 2) pre- and post testing or comparison of assignments over the course of several classes
<p>Goal 3 - Humanistic Attitudes and Perspectives: The most important outcome of the program is to change the way students think about themselves and the world in which they live, to give them a better sense of historical perspective, to instill in them a long-lasting curiosity about human cultural achievement, and to get them to see themselves as an element in history rather than its pinnacle.</p>	<ol style="list-style-type: none"> 1) embedded measures 2) exit interviews with majors, minors, and other students who have done significant coursework or research in the department 3) alumni/ae survey and unsolicited correspondence
<p>Program Enhancement Based on Assessment Results</p>	
<p>Assessment results will be used to determine if course restructuring is needed. Course sequencing is of particular interest. It will also be used to determine if more courses dedicated to oral proficiency are needed.</p> <p>A summary report of assessment finding will be distributed to all faculty in the program to review before a scheduled meeting is conducted. At the meeting faculty will discuss assessment findings, review existing course syllabi and make decisions regarding changes that need to be made in the courses as well as in the course sequencing.</p>	

Attachment III. Hypothetical Example of B.A. in Economics

Program Information	
Name of the Program: Economics Degree: B.A. Department/Interdisciplinary Program: Economics College/School: Liberal Arts College	
Contact Person	
Name: Title: Email Address: Phone:	
Program Mission Statement	
The Economics program is designed to provide students with a strong foundation for positions as economic and statistical analysts in business or government; to continue graduate study and research in economics, business; public policy and law; and/or to obtain a teaching position.	
Program Goals for Student Learning	Measures of Learning Outcomes
Goal 1 - Economics majors are expected to achieve a basic understanding of markets, market structures, and the world economy.	<ul style="list-style-type: none"> • The Assessment Committee will review responses from senior exit interviews. • The Assessment Committee will review GRE exam and other scores to assess student percentile rank. • Questions will be developed for the end-of-course student evaluation forms to evaluate the effectiveness of the relevant courses.

<p>Goal 2 - Economic majors are expected to develop a basic understanding of research methodology including literature surveys, data gathering, data analysis, and policy implications.</p>	<ul style="list-style-type: none"> • Test of Understanding College Economics (TUCE). • Faculty panel will rate all aspects of a sample of student projects according to departmental standards. • The Assessment Committee will review responses from senior exit interviews.
<p>Goal 3 - Economics majors will develop familiarity with basic data sources in both printed and electronic libraries.</p>	<ul style="list-style-type: none"> • The Assessment Committee will review GRE exam & other scores to assess student percentile rank. • Test of Understanding College Economics (TUCE). • Capstone project will be designed to examine the student's ability to gather and use economic data. • Members of the Economics Curriculum Committee will evaluate a sample of student portfolios annually.
<p>Goal 4 - Economics majors are expected to develop an understanding of economic institutions such as the Federal Reserve, stock markets, and financial intermediaries.</p>	<ul style="list-style-type: none"> • Faculty panel will rate all aspects of a sample of student projects according to departmental standards • Members of the Economics Curriculum Committee will evaluate a sample of student portfolios annually.
<p>Program Enhancement Based on Assessment Results</p>	
<p>The Economics Curriculum Committee will be engaged in reviewing data for all assessment plan activities. The Committee will make recommendations for the analysis of data and review results. The Committee will review findings and make recommendations to the department Chair and the faculty for consideration. The Committee will direct the development of a Program Assessment Plan, review the Plan and make agreed upon revisions on an annual basis.</p> <p>The Economics Curriculum Committee will, from among its membership, select faculty to complete all tasks related to data collection, data management, and data analysis. The Committee chair will select at least 2 other members to prepare reports and make presentations to the faculty at least annually.</p>	

Attachment IV. Hypothetical Example of Ph.D. in Astronomy

Program Information	
Name of the Program: Astronomy Degree: Ph.D. Department/Interdisciplinary Program: Astronomy College/School: Graduate School	
Contact Person	
Name: Title: Email Address: Phone:	
Program Mission Statement	
The Ph.D. program in Astronomy educates graduate students toward achieving an advanced-level of understanding of modern astronomical concepts, capable of applying technology in the field, performing original thesis research, and communicating research results to the professional astronomical community.	
Program Goals for Student Learning	Measures of Learning Outcomes
Goal 1 – Students will demonstrate advanced-level knowledge of astronomy.	<ul style="list-style-type: none"> • A written and oral qualifying exam is given after students complete two years of course work. Performance on the exams is evaluated as excellent, very good, good, adequate, and not adequate. • The Graduate Education Committee reviews syllabi for required courses on which the qualifying exams are based and the pass/fail results on the exams to assess whether

	course work adequately prepares students for the test.
Goal 2 – Students will design a scientific project, complete the research, and communicate the results in an oral presentation and a scholarly work.	<ul style="list-style-type: none"> • A faculty committee (selected by the student and faculty mentor) evaluates the overall research project as excellent, very good, good, adequate, barely adequate, or not adequate. • Each student is sent a project review letter each year after passing the qualifying exams which describes the strengths and weaknesses of the work.
Goal 3 – Students will develop expertise in an area of specialization within astronomy.	<ul style="list-style-type: none"> • Students complete course requirements from one of these subfields: Theory, Computation, Observation, or Instrumentation. • The written and qualifying exams include questions to test the student’s knowledge of the area of specialization..
Goal 4 – Students will make original contributions to the field of astronomy at the international level.	<ul style="list-style-type: none"> • Students propose, design, complete, and successfully defend before a faculty committee an original thesis research • By the end of their program, graduates will submit at least one refereed journal article for publication or make at least one presentation at a professional conference
Goal 5 – Students will acquire the ability to obtain external grant support	<ul style="list-style-type: none"> • Students will prepare a mock proposal for an external research award, following the guidelines of the granting agency, for review by the department faculty

<p>Goal 6 – Students will become proficient in designing and teaching of college level courses.</p>	<ul style="list-style-type: none"> • Students will serve as teaching assistants in course under the direct supervision of its instructor for at least one year. • Students will teach independently for at least one semester. • Members of the Department faculty will attend at least two classes taught by each student each term and provide both a written and oral assessment of the quality of its content and the student’s teaching performance.
<p>Program Enhancement Based on Assessment Results</p>	
<ul style="list-style-type: none"> • The Graduate Education Committee will review syllabi from courses on which the qualifying exams are based and results from the Qualifier and make recommendations to the Chair once every three years. • The Graduate Education Committee will compare the quality of second year projects over a three year period and make recommendations to the Chair once every three years. • The Astronomy Department Assessment Committee (ADAC) will review stream course syllabi and the responses to the selected questions from final exams, and make recommendations to the Chair once every three years • The ADAC will review publication and conference presentation records of students completing the Ph.D., and make recommendations to the Chair once every three years. 	