Guidelines for Preparing Learning Outcomes and Assessment Methods

Every new course or program proposal should include paired learning outcomes and assessment methods in the formal proposal.

When developing a course or program, you may refer to this list of verbs or the City Tech general education learning goals included on the next page. ***Please keep in mind that you should only include those areas that your course actually fulfills***—it's not necessary to demonstrate learning outcomes in every category.

Courses intended for Pathways designation should include a second set that show how the course fits into the required learning outcomes for the chosen area.

General Education Learning Goals for City Tech Graduates

KNOWLEDGE/ Develop knowledge from a range of disciplinary perspectives, and hone the ability to deepen and continue learning.

Breadth of knowledge
- Value knowledge and learning.
- Understand and appreciate the range of academic disciplines and their relationship to the fields of professional and applied study.
- Use the arts, sciences and humanities as a forum for the study of values, ethical principles, and the physical world.

Depth of knowledge
- Engage in an in-depth, focused, and sustained program of study.
- Pursue disciplined, Inquiry-based learning in the major.

Lifelong learning
- Show curiosity and the desire to learn.
- Acquire tools for lifelong learning—how to learn, how they learn, knowledge of resources.

SKILLS/ Acquire and use the tools needed for communication, inquiry, analysis, and productive work.

Communication
- Communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means, and in more than one language.

Inquiry/ Analysis
- Derive meaning from experience, as well as gather information from observation.
- Understand and employ both quantitative and qualitative analysis to describe and solve problems, both independently and cooperatively.
- Employ scientific reasoning and logical thinking.
- Use creativity to solve problems.

INTEGRATION/ Work productively within and across disciplines.

Information literacies
- Gather, Interpret, evaluate, and apply information discerningly from a variety of sources.

Systems
- Understand and navigate systems.

Integrate learning
- Resolve difficult issues creatively by employing multiple systems and tools.

- Make meaningful and multiple connections among the liberal arts and between the liberal arts and the areas of study leading to a major or profession.

VALUES, ETHICS, AND RELATIONSHIPS/ Understand and apply values, ethics, and diverse perspectives in personal, professional, civic, and cultural/global domains.

Professional/Personal development
- Demonstrate Intellectual honesty and personal responsibility.
- Discern consequences of decisions and actions.
- Demonstrate intellectual agility and the ability to manage change.
- Work with teams, including those of diverse composition. Build consensus. Respect and use creativity.

Ethics/values
- Transform information into knowledge, and knowledge into judgment and action.
- Assume responsibility for social justice.

Community/Civic engagement
- Demonstrate social and civic knowledge.
- Understand organizations and histories underlying government in a global context.
- Apply knowledge and analyze social, political, economic, and historical issues.
- Show ability to contribute actively by applying knowledge to the identification and analysis of societal and professional problems to enact solutions.

Global/ Multicultural Orientation
- Demonstrate expanded cultural and global awareness and sensitivity.
- Discern multiple perspectives.
- Demonstrate proficiencies and capacities in dealing with a diverse society.
- Communicate across cultural and linguistic boundaries.

Example 1:

LEARNING OUTCOMES	ASSESSMENT METHODS
Demonstrate an understanding of major environmental developments that have occurred in North America from prehistory to the present.	Analysis of student performance on multiple choice and essay questions on the midterm and final exams be used to measure students' understanding of how specific environmental changes relate to the larger historical context in North America.
Demonstrate knowledge of how environmental changes relates to the social and cultural values of everyday people.	This will be measured through evaluation of class discussions of assigned readings, two writing assignments, midterm and final exams. A research paper assignment will ask them to connect a specific environmental change to broader society.
Demonstrate an understanding of the historical roots of the current environmental situation.	This will be measured through evaluation of class discussion of assigned readings, class presentations, midterm and final exams.

GENERAL EDUCATION LEARNING OUTCOMES/ASSESSMENT METHODS

LEARNING OUTCOMES	ASSESSMENT METHODS
KNOWLEDGE: Through the assigned readings and the classroom conversations students will learn both historical information related to the environment and about the process of creating history: i.e. how scholars construct knowledge about nature and the environment.	This will be measured in all class work. i.e., quizzes, essay questions on exams; class discussions of relevant topics, and formal writing assignments.
SKILLS: Using a variety of both primary and secondary sources, students will develop an understanding of the craft of the historian, and develop and apply the methodological tools of history to critically question, analyze, and discuss nature and the resulting environmental problems and issues.	This will be measured through class discussions based on primary documents and through the research paper where students use a combination of primary and secondary sources in their writings.
INTEGRATION: In this course students will be able to examine how large-scale changes in the earth's environmental systems relate to historical changes in culture, society, economics, politics, and technology. They will be able to gather, interpret, evaluate and apply information discerningly from a variety of sources.	This will be measured through students' research projects that require them to examine how the current environmental issues relate to historical changes in culture, society, economics, politics, and technology.
VALUES, ETHICS, AND RELATIONSHIPS: Students develop a better informed understanding of humans' relationship with other parts of nature in order to understand the consequences of their interactions with other aspects of the natural world.	This will be measured through class discussions, and research work.
INQUIRY/ANALYSIS: Understand and employ both quantitative and qualitative analysis to describe and solve problems, both independently and cooperatively.	This will be measured through the research paper process and through the final research papers.

Example 2:

LEARNING OUTCOMES	ASSESSMENT METHODS
1. Apply mathematical, logical, critical thinking, and statistical skills to solve problems in real-world contexts.	**1.** Evaluation of student work in group activities and on the written report.
2. Represent mathematical information symbolically, visually, numerically, and verbally.	**2.** Analysis of individual oral presentations, in-class group activities.
3. Estimate mathematical quantities as well as evaluate the accuracy of estimates, and adjust estimates when necessary.	**3.** Analysis of classroom discussion, in-class estimation group assignments.
4. Represent and know how to read, collect and organize data in an assortment of appropriate written and graphical forms.	**4.** Analysis of classroom discussion, in-class group assignments (e.g., students read a newspaper article on a current issue, collect and analyze data related to the issue in the article, and write a report), learning logs.
5. Recognize and understand functions as a way of modeling correspondence between two variables (linear and exponential).	**5.** Analysis of individual short essay related to functions (e.g., population growth, economics, climate change).
6 Describe the behavior of common functions in words, graphically, algebraically and in tables.	**6.** Analysis of the written report and group presentation (e.g., an analysis of the garbage patch in the Pacific Ocean), learning logs.

GENERAL EDUCATION LEARNING OUTCOMES/ASSESSMENT METHODS

LEARNING OUTCOMES	ASSESSMENT METHODS
1. Demonstrate the ability to work collaboratively and independently on assignments in and outside a classroom setting.	**1.** Analysis of student performance in classroom discussions, group assignments and individual oral presentations.
2. Understand and employ both quantitative and qualitative analysis to solve problems**.**	**2.** Analysis of student performance in Classroom Discussion, Group Activities, Group Presentations, Quizzes, Midterm, Final Exam.
3. Develop reading, writing competencies, and listening skills.	**3.** Analysis of biweekly reading and writing assignments, individual and group presentation, classroom discussion. Each homework assignment requires written responses.
4. Work with teams. Build consensus. Use creativity.	**4.** Analysis of student performance Group Projects and Presentations.