

## Student Learning Outcomes

List the outcomes intended for students participating in the course.

Student learning outcomes should be phrased in terms of observable or measurable behaviors that a student should be expected to demonstrate as a result of taking the course.

Some examples of well-written Student Learning Outcomes statements:

"By the end of this course, students will be able to.....

.....*identify* five key provisions of the clean air act"

.....*outline* the procedure for calibrating a gas chromatograph"

.....*interpret* poetry in the cultural context of its period"

.....*distinguish* between conduction and convection"

.....*apply* structured and semi-structured interviewing techniques in his/her fieldwork"

.....*calculate* the probability that two sample means will differ by more than 5% "

.....*explain* which economic and political factors contributed to the outbreak of W.W.II"

.....*design* an experiment to determine the effect of temperature on..."

.....*formulate* a resume in the foreign language for a job application abroad"

.....*evaluate* the usefulness of various anthropological research methods for the study of a specific problem by selecting one of the options and justifying your choice"

Student learning outcomes that are phrased . *the student will: know, learn, appreciate, understand, etc.* .are not appropriate for this purpose.

They may be critically important overarching goals, but are not specific enough to lend themselves to measurability for the purposes of course assessment.

## Integrating Learning Objectives into Courses and Course Syllabi

Outcomes assessment and designing courses around learning objectives are “best practices” in higher education, and accrediting bodies, such as WASC, increasingly expect campuses to assess student learning. New WASC standards, to be fully implemented in 2003, explicitly require these practices.

### Course Objectives Can Help Students Learn

Course objectives provide a description of what you are trying to accomplish. They focus on what the students will learn, rather than on how you will structure their learning. For example, rather than saying, “I plan to cover the Perez Theory,” you might state that “Students will be able to apply the Perez Theory to real-world problems” or “Students will be able to list the major components of the Perez Theory.” These statements define different expectations for students.

Making learning objectives explicit will help you design your course and will help students focus their learning. “The idea is simple: one should have a clear idea of what the intended outcomes of the course are if one is to rationally develop it” (Menges, Weimer, & Associates, 1996, p. 188). Having delineated objectives allows you to:

- Focus your planning of assignments, topics, and assessments. For example, you might create a table with three columns: objectives, activities, and assessment that show what students will learn, how the course will be structured to promote this learning, and how student learning will be assessed. This leads to “mapping” and “sequencing” the course, including linking course components (Menges, Weimer, & Associates, 1996). You could use assessment results to make informed changes the next time you teach the course, and assessment results could be aggregated across sections of the course to evaluate program learning objectives.
- Integrate your course into the curriculum. Students should experience a coherent curriculum, and this involves planning to ensure that program objectives are systematically introduced, practiced, and reinforced.
- Communicate objectives to students in advance, allowing them to make informed decisions before enrolling, to monitor and direct their own learning around objectives, and to communicate what they’ve learned to employers, graduate schools, or transfer institutions.

- Improve the course (and program) by using classroom assessment (Angelo & Cross), exams, and other outcomes assessments tied to objectives.

## Course Objectives Should be Aligned with Program Objectives

Your program should have explicit goals and learning objectives, and course objectives should be aligned with them. Students cannot be expected to master learning objectives unless they are given the opportunity to develop them in required coursework. For example, if information competency skills are among the learning objectives for your program and students are not required to develop and practice these skills, it is unreasonable to expect them among graduates. We suggest that each department develop a matrix that ties program learning objectives to specific courses. Many faculty report that departmental discussions of the alignment of course learning objectives, assignments, and program objectives lead to significant changes in their courses and improved awareness of how the program functions as a whole. Faculty, of course, can supplement these basic objectives with personal objectives for their own sections of the course.

This is not an attempt to standardize pedagogy. There are many ways to structure learning to meet objectives. For example, if an objective is for students to improve their ability to work in groups, groups could be given a variety of assignments and could be formed in many ways. Groups could meet face-to-face during class or outside of class, or virtual groups could be formed. One instructor may have a series of small group projects with groups varying in membership, while another may form collaborative groups that work together throughout the quarter. Feedback on group participation could be made by peers, self-evaluation, and/or faculty evaluation, and it could be structured using rating forms or rubrics. Alternatively, if one of the course objectives is to improve student writing, students could be given a variety of writing assignments, could be asked to review each others' writing, could do collaborative writing, could iterate drafts of papers, and/or could critically examine writing samples.

### A Cohesive Curriculum

Curricula should be structured to introduce key learning opportunities early and to reinforce this learning throughout the curriculum. For example, information competency skills could be introduced in a lower-division course, and upper-division courses could require students to practice and further develop these skills. According to Diamond (1998, p. 84), based on Romer (1995), a quality undergraduate curriculum requires:

- “Coherence. Students succeed best in developing higher-order skills (critical thinking, written and oral communications, problem solving) when such skills are reinforced throughout their educational program.”
- “Synthesizing experiences. Students also learn best when they are required to synthesize knowledge and skills learned in different places in the context of a single problem or setting.”
- “Ongoing practice of learned skills. Unpracticed skills atrophy quickly, particularly core skills such as computation and writing.”
- “Integration of education and experience. Classroom learning is both augmented and reinforced by multiple opportunities to apply what is learned.”

## Defining Course Objectives

Course objectives should relate to program objectives, but might be restated to directly relate to course content. For example, a biology program may have student competence in a variety of laboratory skills as an objective, and a specific biology course may have competence in only two or three laboratory skills as objectives. Learning objectives should be defined with “action verbs,” to describe **knowledge, skills, and values** that students should acquire. A popular way to consider objectives is Bloom’s taxonomy. The table on the next page provides some action verbs that might be used to describe learning at the different levels. To create your objectives, finish this sentence: “At the end of this course students will be able to . . .”

Effective Objectives:

1. Describe what you want your students to learn in your course.
2. Are aligned with program goals and objectives and the rest of the students’ curriculum.
3. Tell how you will know a teaching goal has been achieved.
4. Use action words that specify definite, observable behaviors.
5. Are assessable through one or more indicators (papers, quizzes, projects, presentations, journals, portfolios, etc.)
6. Are realistic and achievable.

7. Use simple language.

Bloom's Level	Related Action Verbs
<b>Knowledge</b> (to know specific facts, terms, concepts, principles, or theories)	define, identify, indicate, know, label, list, name, recall, select
<b>Comprehension</b> (to understand, interpret, compare and contrast, explain)	classify, compare, contrast, describe, discuss, explain, locate, paraphrase, report, review, summarize
<b>Application</b> (to apply knowledge to new situations, to solve problems)	apply, compute, construct, demonstrate, dramatize, give examples, investigate, predict, use
<b>Analysis</b> (to identify the organizational structure of something; to identify parts, relationships, and organizing principles)	analyze, appraise, categorize, determine, diagram, differentiate, experiment, question, relate, solve, test
<b>Synthesis</b> (to create something, to integrate ideas into a solution, to propose an action plan, to formulate a new classification scheme)	arrange, assemble, collect, compose, construct, create, design, formulate, manage, organize, perform, plan, prepare, produce, propose
<b>Evaluation</b> (to judge the quality of something based on its adequacy, value, logic, or use)	appraise, assess, choose, decide, estimate, evaluate, judge, rate, revise, select

Examples of Course Learning Objectives

At the end of this course students will be able to:

1. Critically review the methodology of a research study published in a Sociology journal.
2. Design a Web site using HTML and JavaScript.
3. Describe the contributions of women to American history.
4. Recognize the works of major Renaissance artists.
5. Facilitate a group to achieve agreed-upon goals.
6. Determine and apply the appropriate statistical procedures to analyze the results of simple experiments.
7. Develop an individual learning plan for a child with a learning disability.
8. Analyze blood samples using equipment at local community hospitals.
9. Produce a strategic plan for a small manufacturing business.
10. Analyze a character's motivation and portray that character before an audience.
11. Translate a Spanish newspaper article to English using a dictionary.
12. Differentiate among five major approaches to analyzing literature.
13. Describe the major ethical issues one must consider when planning a human-subjects study.
14. Locate and critically evaluate information on current political issues on the Web.
15. List and describe the functions of the major components of the human nervous system.
16. Correctly classify rock samples found in Kern County.
17. Analyze a tennis player's game and provide effective feedback and training.

18. Conduct a systems analysis of a group interaction.
19. Demonstrate active listening skills when interviewing clients.
20. Apply social psychological principles to suggest solutions to contemporary social problems.

A more detailed model for stating learning objectives requires that objectives have three parts: a condition, an observable behavior, and a standard. The table below provides three examples.

<b>Condition</b>	<b>Observable Behavior</b>	<b>Standard</b>
1. Given a list of drugs	the student will be able to classify each item as amphetamine or barbiturate	with at least 70% accuracy.
2. Immediately following a fifteen-minute discussion on a topic	the student will be able to summarize in writing the major issues being discussed	mentioning at least three of the five major topics.
3. Given an algebraic equation with one unknown	the student will be able to correctly solve a simple linear equation	within a period of five minutes.

### *Consider Core Learning Objectives*

In addition to discipline-specific objectives, some learning objectives are taught, practiced, and reinforced throughout much of the curriculum. When planning your course, consider adding one or more of these important objectives (Diamond, 1998; Gardiner, 1996):

- Communication skills, including oral (speaking and listening) and written (writing and reading) skills.
- Interpersonal skills, including the ability to lead and to work cooperatively with others.
- Computational skills, including applications of statistics.
- Problem-solving skills in a variety of contexts.
- Critical thinking skills in a variety of contexts.
- Information competency skills: the ability to find, evaluate, use, and communicate information in all its various formats. Information competency, broadly defined, includes computer literacy, library literacy, media literacy, technological literacy, ethics, critical thinking, and communication skills. Students should be aware of issues like access and privacy, intellectual property, copyright and fair use, and the power and influence of information, including information provided in non-print media. They should be able to create information and communicate it effectively (CLRIT Work Group on Information Competence, December, 1995).
- Multicultural awareness, including respect for people unlike yourself and the ability to take perspectives of and to interact positively with groups other than your own.
- Intellectual flexibility, an openness to new ideas and an ability to adapt to a changing environment.
- Understanding of scientific methods, including distinguishing between empirical evidence and unsubstantiated claims.
- Ethics, including an awareness of personal and others' values and how they relate to ethical decision-making.
- "Conscientiousness, personal responsibility, and dependability" (Gardiner, 1996, p. 7).