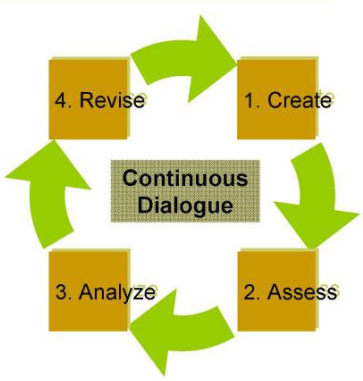

The Skyline College SLOAC Framework:

An Implementation Guide for the Student Learning Outcomes and Assessment Cycle

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Version 2.1

FALL 2008

Developed by the Skyline College SLOAC Committee

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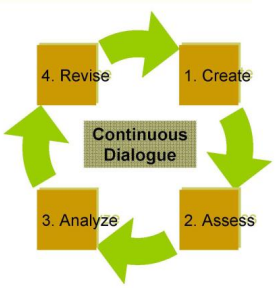


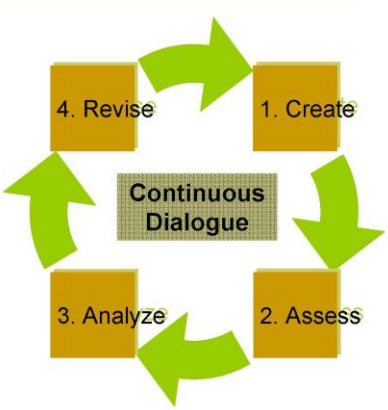
WHAT YOU CAN EXPECT

This section of the framework provides information on Skyline College's approach to student learning outcomes and assessment. The mission of Skyline College is to foster student learning. In keeping with that mission, Skyline College ensures that student learning outcomes are at the center of its key processes and allocation of resources through a process of continuous assessment of student learning. The Skyline College model for Student Learning Outcomes ensures that Student Learning Outcomes and Assessment at all levels—course, program, and institution-- are integrated through collaborative, college-wide planning, and support the overall goals, mission, vision, and values of the college. The graphic depiction of the model demonstrates this cycle of continuous feedback and dialogue within a framework of student learning outcomes and assessment tied to the college-wide mission, vision, values and goals. The process describes the flow and recommended starting points and the philosophy provides the vision and direction for SLOAC at Skyline College.

SLOAC PROCESS

The central questions we are continuously assessing are: 1) Upon completing a course/ program/ degree (including utilization of or participation in student services or special programs/services, e. g., EOPS program), what do we want students to learn? (2) How do we know they've learned it? (3) If the assessment results are less than satisfactory, what do we need to refine in order to help them to learn?

The Skyline College model for outcomes assessment revolves around continuous dialogue to ensure a systematic, ongoing cycle of assessment. Such assessment is crucial to the continuous understanding and improvement of student learning.



Assessment promotes continuous improvement by providing necessary evidence to guide effective decision-making at all levels: Classroom/Course level, including Student Support Services; Program level; and Institutional level. Assessment means "the systematic collection, analysis, interpretation, and use of information to understand and improve teaching and learning…Assessment is an ongoing process aimed at understanding and improving student learning" (Angelo 7).

RECOMMENDED STARTING POINTS

At Skyline College the assessment cycle begins at the **Course/Student Services level**. Faculty and staff, as discipline experts and service providers, create student learning outcomes in their course outlines or service plans, and assess, analyze, and revise them at the classroom/service level. SLOs are clearly articulated so that students are aware of both the

expected outcome and the means of assessing the outcome. To complete the assessment cycle, faculty and staff use classroom/service evaluation data to revise and refine SLOs for a given course/service. Assessment at this level is faculty/staff-directed, student-centered, and linked to program and institutional SLOs.

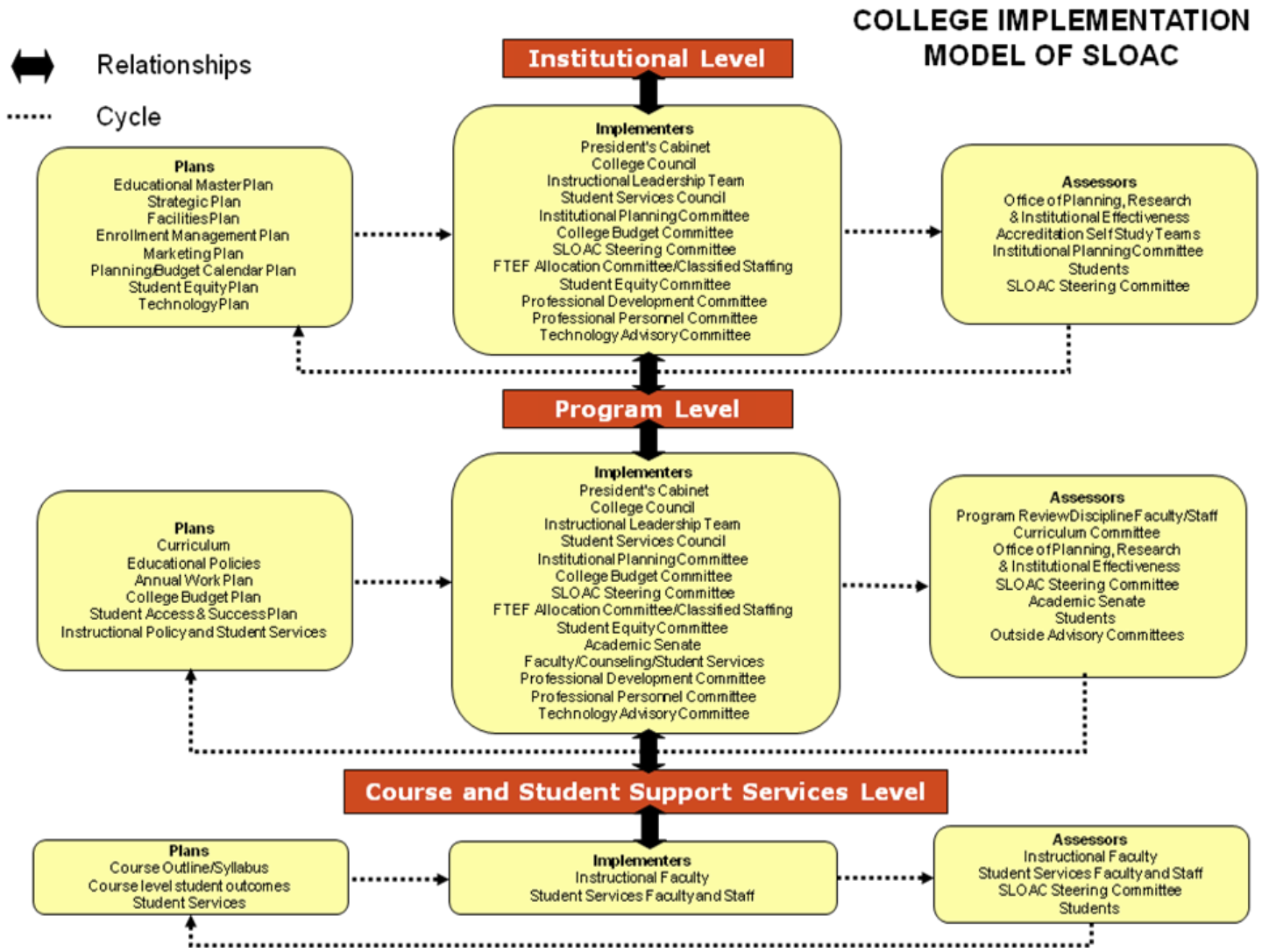
At the **Program Level**, the process of creating, assessing, analyzing, and revising student learning outcomes for both instructional--including instructional outcomes and the general education curriculum-- and student services/support programs is the responsibility of instructional departments/divisions and student services. Through program review, individual faculty and staff, departments, divisions, and the vice presidents of instruction and student services revise instructional programs and student support services for continuous improvement of student learning. Program Level plans integrate resource prioritization and allocations and distribution of human resources. Program Level activities correlate with and are in consort with Course Level and/or Student Services activities, and directly contribute to the achievement of the institutional mission and goals.

At the **Institutional Level**, the process of creating, assessing, analyzing, and revising student learning outcomes is accomplished by college-wide, collaborative planning; implemented by shared governance groups; and assessed by the Office of Planning, Research & Institutional Effectiveness and other college constituencies. All faculty and staff are recognized as professionals who support the educational mission and goals of the college. Institutional outcomes assessment is linked to Course and Program SLOs through institutional planning, budget, and evaluation processes.

A MODEL FOR COLLEGE IMPLEMENTATION

The Student Learning Outcomes model represents the importance of the relationships at all levels at the college whether at the course, student services, program or institutional level. The continuous cycle of the process doesn't stop. Each level itself begins with planning, continues through implementation and finally assessment. The assessment process is not complete until it is re-evaluated. The completion of one cycle will have an effect on the process and signal the launch of a subsequent cycle. It is this type of continuity among all stages of the cycle that helps to build on strengths or improve weaknesses through a reflection on the cycle as a whole.

COLLEGE IMPLEMENTATION MODEL OF SLOAC



SKYLINE COLLEGE'S STUDENT LEARNING OUTCOMES ASSESSMENT CYCLE PHILOSOPHY

Skyline College is committed to facilitating student success. One means to fulfill this mission is through the Student Learning Outcomes Assessment Cycle (SLOAC), which asks campus constituents to engage in reflective practice. Properly conceived, the SLOAC should be first and foremost about improving student learning. As such, Skyline stands by the American Association of Higher Education's (AAHE) "Nine Principles of Good Assessment" (see Appendix D), the first principle being that "Assessment is not an end in itself but a vehicle for educational improvement."

Skyline is well aware that in any evaluation of student learning, the use of Student Learning Outcomes (SLOs) is only one component of a general profile. The Council for Higher Education (CHEA) Board of Directors' Statement of Mutual Responsibilities for Student Learning Outcomes (September 2003) prudently affirms that "judgments about quality are complex and must be based on a range of factors, including the purposes, resources, processes, and values of an institution…In applying these guidelines, it is imperative for accrediting agencies-- as well as the institutions and programs they accredit-- to avoid narrow definitions of student learning or excessively standardized measures of student achievement."

Skyline also agrees with the mandate of the Academic Senate of California Community Colleges that a successful SLOAC must engage faculty and be faculty driven (ASCCC Resolution 2.01 F04 "Insistence that SLO Design Originate with Local Faculty"). The responsibility for teaching and learning lies primarily with faculty, who are well versed in their disciplines, invested in student learning, and knowledgeable about the principles of their respective and professional associations and licensing boards. Therefore, faculty must play a central role in developing explicit statements of what students will learn on the course, program, and institutional levels as well as interpreting and determining the implications of data. Secondly, the use of SLOs at the department or individual course level should not be prescriptive or intrusive on the principle of academic freedom (ASCCC Resolution 2.01 F03 "Protection of Academic Freedom and Privacy of Students and Faculty").

The aforementioned is not meant to obviate the importance of collaboration between faculty, classified staff, administrators, and students to achieve our institutional goals. On the contrary, Skyline recognizes that the SLOAC "foster[s] wider improvement when representatives from across the educational community [student services staff, other key members of the college's support system, and students] are involved" (AAHE assessment principle #6). Clearly discussion will be enhanced with participation by all parties with a stake in improving student learning.

Skyline also is committed to institutionalizing the SLOAC. The initiative cannot be simply an empty exercise in data gathering and reporting. Nor should said data be used to evaluate individual faculty (ASCCC Resolution 2.01 F03 “Protection of Academic Freedom and Privacy of Students and Faculty”). Rather, information about learning outcomes should be an integral part of decision making ranging from the curricular level to the planning and budget level. Accordingly, Skyline affirms the AAHE's assessment principle #7: "The point of assessment is not to gather data and return 'results': it is a process that starts with the questions of decision-makers, that involves them in the gathering and interpreting of data, and that informs and helps guide continuous improvement."

The decisions about the development and application of the SLOAC are a collective responsibility of faculty, administrators, and accrediting agencies. Nonetheless, the responsibility for the interpretation and local implementation of the SLOAC shall remain within the purview of individual faculty/ department/ programs or student services units. As such, the SLOAC initiative will serve as a means to optimize student learning.

Approved in April 2005 by:
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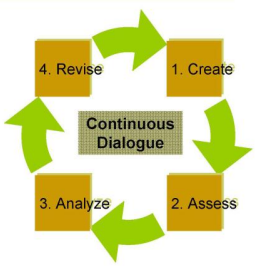
SECTION TWO

Creating Student Learning Outcomes

WHAT YOU CAN EXPECT…



This section of the framework provides information on Skyline College's approaches to creating student learning outcomes. We begin with a definition of student learning outcomes and how they affect learning, as well as the distinctions between objectives and outcomes. We then offer two different "step by step" approaches to help you write student learning outcomes, including worksheets to facilitate this process and a checklist for you to use once they are written.

For those who generated course level outcomes, we provide strategies to strengthen overall coherence of curricular offerings. On the more immediate level is consideration of whether and how your assignments align with specific learning outcomes. On the more global level is consideration of whether and how course student learning outcomes align with those of the program and the institution. To help you engage in this process, we offer you worksheets and questions to consider.

Note. Many of the resources in this chapter were adapted from Bakersfield College's assessment website (http://online.bakersfieldcollege.edu/courseassessment/) as well as Cabrillo College's website (http://www.cabrillo.edu/services/pro/assess/assweb/index.html). We also built upon presentations by Dr. Mary Allen, a consultant in assessment and accreditation in higher education. You can access her handout at http://www.csub.edu/assessmentcenter/AllenWorkshopHandoutJan06.pdf.

THE SLO ENVIRONMENT

Learning is a complex and reciprocal process that involves mutual expectations between students and faculty or staff. How well a student learns is as dependent upon how much he or she invests in the process as on the conditions for learning created by courses, programs, and institutions. Faculty or staff expects students to come to learning contexts prepared and committed to learn. Students, in turn, expect faculty to create effective learning opportunities and environments. They expect us to hold them to appropriate standards and to help them attain these standards.

Student Learning Outcomes (SLOs) help to clarify the responsibilities of students, faculty and staff. Thus, faculty and staff should formulate SLOs at all levels: course, program, and institution. Our ultimate aim is to improve instruction and learning at all levels, as well as to satisfy an important component of accreditation. To this end, we will develop and implement a public, transparent, comprehensive, integrated, and sustainable process to assess learning.

WHAT ARE STUDENT LEARNING OUTCOMES?

An SLO contains three primary characteristics:

- States what a learner will be able to do upon successful completion of a course, program, service, and/or degree or certificate;
- Is expressed using active verbs, and as such, incorporates any or all of the domains of learning (cognitive, psychomotor, or affective);
- Is assessable and measurable.

An SLO is a clear statement of what a student will be able to do with what s/he has learned, upon successfully completing a course, program or service. It describes the assessable and measurable knowledge, skills, abilities or attitudes that students should attain by the end of a learning process. The learning process includes any set of college experiences (such as courses, degree programs, certificate programs, or utilization of or participation in student services or special programs/services).

An individual SLO is formulated using active verbs (such as “analyze,” “compare,”

"demonstrate," "compose," and "embody"), that derive from Bloom's taxonomy of learning. A set of SLOs for a particular course or program will incorporate any or all of the following three domains of learning that were developed by Bloom to classify intellectual behavior and learning: (1) cognitive (knowledge and understanding), (2) psychomotor (physical skills and abilities), and (3) affective (attitudes, behaviors, and values). Refer to Appendix B for a fairly comprehensive list of active verbs for the three domains of learning.

Each SLO will be assessed by evaluating appropriate student performances or products (such as exams, essays, projects, portfolios, demonstrations, performances, art work, etc). The student performances or products being assessed should display evidence that learning has occurred at a specified level of competency and as a result of completing the course or program. Criteria and standards—such as rubrics—need to be established to evaluate the quality of student performances or products. Developing appropriate methods of assessment as well as clear evaluative criteria is as important as writing clear SLOs.

HOW DOES AN SLO OPTIMIZE LEARNING?

The SLO complements instruction and service activities and serves to guide good classroom and non-classroom practices. According to Chickering and Gamson (www.evergreen.edu/washcenter/natlc/pdf/fall1987.pdf), the seven principles for good classroom and non-classroom practices are:

- encourage contact amongst students and faculty and staff;
- develop reciprocity and cooperation among students;
- encourage active learning;
- give prompt feedback;
- emphasize time on task;
- communicate high expectations;
- respect diverse talents and ways of learning.

The SLO embodies high expectations for instructor and student. It describes what students will be able to do upon successful completion of the course, program, or degree. To achieve the SLO, the instructor might implement active-learning activities so that students have the opportunity to practice or apply the skills, tools, and/or content needed to achieve a learning

outcome.

SLOs also are public, transparent, and communicated to the student. In the classroom they are part of the syllabus, and the students are reminded of the SLOs throughout the course. The instructor explains to the students when and how their learning will be assessed, and provides students with prompt and periodic feedback. SLOs that pertain to Student Services units, such as Counseling or Financial Aid, should be communicated through information about a process or activity, such as creating a Student Education Plan or completing a financial aid form. Thus, students should have a better sense of how to work with each other and with the instructor or staff to achieve these outcomes.

The pre-SLO syllabus told the students what material and activities the course would cover. The new SLO syllabus describes what abilities, knowledge, and/or attitudes the students will be able to display as a result of their learning experience. It describes the expected student learning outcomes in terms of what the student will know and be able to do. These expected outcomes—and the tools for their assessment—are to be formulated in a way that respects diverse abilities, talents, and modes of learning. Classroom and non-classroom tasks and activities are to be expressly devoted to achieving the learning outcomes, enabling the students to direct their own talents and efforts toward the desired outcomes.

OBJECTIVES VS. SLOS

One way to understand the distinction between objectives and SLOs is to understand how they are related to each other. While course objectives are the input, outcome(s) are the output. Instructors and staff provide whichever discrete skills, tools and/or content that are needed for students to fulfill the outcome(s) (the "input"). Conversely, student learning outcomes describe what students can DO with the aforementioned to demonstrate proficiency (the "output"). Note the shift in orientation from the instructors and staff "inputting" to the students "outputting."

Consider the following example from a Skyline developmental English course. What differences do you note?

Course Objectives:

Provide instruction in the following areas:

- Pre-writing activities;
- Organization: paragraph and essay unity;
- Thesis statements/ topic sentences;
- Introductions and conclusions;
- Revision, editing, and proofreading strategies;
- Sentence-combining;
- Various rhetorical modes with an emphasis on compare-contrast, classification, persuasion.

Course SLO:

Write focused, coherent, well-developed largely text based essays appropriate to the developmental level organized into effective paragraphs with major and minor supporting details, which support a clear thesis statement, and demonstrate competence in standard English grammar and usage.

A parallel example from Student Services is from the Health Center. What differences do you note?

Program Objectives:

- Promote personal responsibility and student self-advocacy;
- Raise awareness of services, medical insurance, etc.
- Increase awareness of community for themselves and others.

Program SLOs:

- Articulate (explain) their health care needs to receive appropriate assistance.
- Evaluate~~s~~ resources needed to improve physical/mental/ emotional health.
- Identify symptoms of substance abuse, eating disorder and/or other addictive/ behaviors and learn coping strategies;
- Demonstrate awareness of the global implications of diseases such as HIV, diabetes, etc.

Note that the course objectives make explicit what the teacher will provide to enable students to fulfill the outcome, breaking down the process into manageable stages. On the other hand, the SLO shifts to the students' perspective and identifies what they should be able to DO with that knowledge. The SLO requires students to employ higher level thinking that integrates the content and activities. In sum, objectives can be thought of as the input and SLOs the output, with students applying all they have learned.

Another way of thinking of SLOs is they are on a "macro " level. When articulating student learning outcomes, think of the big picture. As such, SLOs:

- Are broad in scope and require **higher level** thinking;
- Require students to **synthesize** many discrete skills or areas of content;
- Ask students to **produce** something-- papers, projects, portfolios, demonstrations, performances, art work, exams, etc.-- that applies what they have learned;
- Require faculty to **evaluate** or **assess** the product to measure students' achievement or mastery of the outcomes.

On the other hand, objectives are on a more microscopic level, describing discrete skills, tools, and content. Think of objectives as the building blocks used to produce whatever is used to demonstrate mastery of an outcome. Objectives can be practiced and assessed individually, but are usually only a portion of an overall project or application.

In sum, consider the distinctions described in the following table:

Objectives/ Teacher Input	**Outcome(s)/ Student Output**
Objectives describe skills, tools, and/or content (nuts and bolts) that enable a student to fulfill the outcome(s).	Outcome(s) describe overarching product(s) that students will generate by applying the skills, tools, or content.
Objectives require the use of less sophisticated tasks such as comprehension or replication.	Outcome(s) require the use of higher level thinking such as analysis, synthesis, and evaluation in order to demonstrate students' ability to apply the skills, tools, and/or content in authentic contexts for learning.
Objectives may be impossible to assess because they can often be numerous, specific, and detailed.	Outcome(s) are assessable; they result in product(s) that can be observed as a behavior, attitude, skill, or discrete usable knowledge *and* can be evaluated against criteria.

See Appendix C for an exercise on differentiating between objectives and SLOs.

As you talk to others about SLOs, keep in mind:

- Each course, classroom, and program has unique factors.
- Disciplines have unique language and culture.
- Cross disciplinary conversations are invaluable.
- Ultimately discipline-specific conversations best define competencies for students.
- Everyone is a learner when it comes to assessment.
- As professionals, we are guided by the principles of academic freedom.

As you write your SLOs, keep the following in mind:

- Use action verbs. See Appendix B for the action verbs in Bloom's Taxonomy.
- Make sure that the SLO is something that can be assessed or tested. For example, be careful when describing attitudes in a learning outcome. They are hard to assess. Ask yourself if the attitude is crucial to success in your course or service. Are you satisfied if a student possesses the knowledge and skills being taught but doesn't have a certain attitude?
- Write the SLO in language that a student will understand. SLOs will ultimately be included on your syllabus and you will explain them to the students. To check for clarity, try explaining the SLO to a colleague who is NOT in your field. See if he/she understands it.
- Try to limit your SLOs to no more than three since eventually you'll have to assess all of them.

Use the Student Learning Outcomes Checklist on the next page to evaluate the quality and appropriateness of your SLOs.

SKYLINE COLLEGE		
Student Learning Outcomes Checklist		
	Yes	**No**
Do the SLOs include active verbs?		
Can the SLOs be assessed?		
Do the SLOs address the expected level of learning using Bloom's Taxonomy as a guideline? (See Appendix B.)		
Are the SLOs written as outcomes rather than as objectives? • Language indicates an important overarching concept versus small lessons or discrete objectives. • Outcomes address what a student will be able to **do** at the completion of the course, program or service. • SLOs address student competency rather than content coverage.		
Are the SLOs appropriate? • They are consistent with the course outline of record. • They represent a fundamental result of the course. • If applicable, they align with other courses in a sequence. • They represent collegiate-level work.		
Will students understand the SLOs?		
If "no" in any category, what will you revise?		

WRITING SLOS

Time to get started! Moving from a teacher based to a learner centered focus, we suggest two possible approaches to crafting your SLOs, recognizing that the two approaches complement each other and can be combined. Both are explained in more detail below with steps to follow and accompanying worksheets.

Major Assignments or Activities Approach. A good place to start is to look at your major assignments or activities[1]. In the left column, list all of your major assignments for the course or service, and describe what students will *do* to demonstrate their understanding--not just content, activities or hours. What is the primary purpose of each assignment? What are the students expected to produce as a result of each assignment? These are the products or demonstrations of your outcomes. Then in the right column, describe *what* the students are being asked to demonstrate in this assignment; note that sometimes multiple assignments will have a common SLO. Depending on the number of outcomes, each sentence should describe each major knowledge, skill, ability or attitude that a student will have gained by the end of your class. (Instructors, see Worksheet I; Student Services staff, see Worksheet III. You also can download the worksheets from http://www.smccd.net/accounts/skysloac/framework.html.)

Objectives Approach. Another approach to writing the SLOs is to draw from the specific objectives of the existing course outline or service, and to a lesser extent the assignments, activities and evaluation of student performance sections. Your objectives state what skills, tools, and/or content you'll provide; if said objectives are the "building blocks," what do you want them to "construct" in order to demonstrate competence? Try to categorize them according to the larger purpose that they will serve. By tying these objectives to something students will produce and an evaluation process, making them measurable in a given context, you have a quantifiable method of assessing whether a student has fulfilled the SLO.
(Instructors, see Worksheet II; Student Services staff, see Worksheet IV. You also can download the worksheets from http://www.smccd.net/accounts/skysloac/framework.html)

[1] Major assignments are culminating experiences, a synthesis of all of the minor assignments or activities that students completed. Think of the major assignments as being "the building" and the minor assignments as being "building blocks"—the skills, tools, content, opportunities for practice, etc.

Student Learning Outcomes Worksheet -- Instructional Generated from Assignment/Projects/Tests

Course Name and Number: _____

Major Assignments, Projects, or Tests and their Rationale	Outcome Knowledge Skill/Ability or Attitude that a Student Can Demonstrate upon Completion of a Course or Program

Student Learning Outcomes Worksheet -- Instructional Generated from Objectives

Course Name and Number: _____

Related Objectives **Skills, Tools, and/or Content that Instructors Provide and their Rationale**	**Outcome** **Knowledge Skill/Ability or Attitude that a Student Can Demonstrate upon Completion of a Course or Program**

Student Learning Outcomes Worksheet – Student Services Generated from Assignment/Projects/Tests/ Tasks

Course Name and Number: _____

Major Assignments, Projects, Tests, and Tasks and their Rationale	Outcome Knowledge Skill/Ability or Attitude that a Student Can Demonstrate upon Utilization of a Student Support Services Unit

Student Learning Outcomes Worksheet – Student Services Generated from Skills, Tools, and/or Content Provided

Course Name and Number: _____

Related Objectives **Skills, Tools, and/or Content that Student Services Staff Provide and their Rationale**	**Outcome** **Knowledge Skill/Ability or Attitude that a Student Can Demonstrate upon Utilization of Student Support Services Unit**

ALIGNING ASSIGNMENTS AND ACTIVITIES WITH STUDENT LEARNING OUTCOMES

The philosophical and pedagogical shift in thinking from "What I teach" in a class hour to "What students do" in that hour brings the focus of SLOAC down to individual assignments and activities for that class hour, class by class and week by week throughout the semester. SLOs provide a focus and standard for the classroom and address what the students will be expected to be able to do after successful completion of the course. Assignments should help students develop skills, competencies and attitudes relevant to learning outcomes (what students are asked to demonstrate in these assignments). When faculty align assignments with SLOs, students may begin to apply higher learning to a given situation or context. Coming full circle, then, faculty can also use assignments to reflect on instructional priorities, in this case the SLOs, and as a means to determine whether SLOs should be revised.

When critiquing an assignment in relation to student learning outcomes, faculty need to consider first the relevance of the assignment: does the assignment guide students toward achieving learning outcomes, and if so, how? Just as importantly, do the course objectives (as stated in the course outline) build a bridge to fulfilling the SLOs?

In the bigger picture, faculty will need to evaluate not only whether assignments align with SLOs for a particular course, but also whether the course aligns with other courses in a sequence ("introduce, practice or demonstrate" in terms of program level outcomes) and, finally, whether the course coordinates with institutional outcomes. In this evaluative process, faculty may find that they eliminate assignments that do not guide students toward an outcome, as well as create assignments which better address the cognitive, psychomotor, and affective domains of Bloom's Taxonomy to comprehensively identify and measure student learning.

Faculty already engaged in writing SLOs and aligning their assignments to these outcomes say that the shift in thinking from <u>what I teach</u> to <u>what students do</u> has focused their efforts on student learning and brought day by day changes into their classrooms as they work to identify assignments that enhance learning and then assess whether that learning is taking place.

GETTING STARTED

To align assignments and activities with SLOs, this section of the workbook will ask you to consider the following questions:

- What are the major assignments-- papers, projects, portfolios, demonstrations, performances, art work, exams, etc.-- that measure your outcomes?
- What revisions, if any, need to be made?
- Which objectives-- skills, tools, and/or content-- help students to successfully complete your major assignments?
- What revisions, if any, need to be made? Consider, for instance, if students are expected to demonstrate proficiency through an assignment yet have not been given adequate preparation.

As you complete these steps, remember that you are focusing on what students will *do*, not necessarily what must be covered. Doing presupposes knowing, so of course time must be spent helping students to assimilate new knowledge. But using this approach, the organizing principle of your class is based on what students actually do and how they apply or demonstrate that knowledge, ultimately leading to mastery of the course outcomes.

Step One: Aligning Major Assignments and Activities with SLOs

Use the Major Assignments Worksheet or a variation of the worksheet to plot which of the course SLOs the major assignments fulfill. List horizontally the course's SLOs; the general rule of thumb is that there should be no more than three SLOs. Then list vertically the major assignments that measure your outcome(s). Mark "X" if the assignment addresses the SLO.

COURSE NAME AND NUMBER:			
ASSIGNMENTS:	**SLO 1**	**SLO 2**	**SLO 3**

Step Two: Questions to Consider After Aligning Major Assignments and Activities with SLOs

Examining whether your assignments align with your SLOs is good classroom practice. To do so, answer the following questions:

- Do my assignments provide students with an opportunity to demonstrate their mastery of the SLOs? Specifically, do any of the assignments fail to satisfy any of the SLOs? Cross out the assignments that need to be replaced with new assignments that will measure the SLOs.
- Or conversely, do the SLOs need to be revised to more accurately reflect the purpose(s) of the assignment(s)? Circle the SLOs that need to be further scrutinized.
- Do my assignments require that students demonstrate the kinds of knowledge, skills/ abilities, and/or attitudes that I am actually grading?
- Though it is difficult, check once again to make sure that the matrix you've created is focused on the assignments rather than the content that is covered.

Step Three: Aligning Related Objectives with Major Assignments

Narrowing your focus to the assignments that *do* align with your SLOs, identify the resources that each major assignment requires to be completed. As such, it is important to ask:

- What are the precise skills, tools and/or content (objectives) that students will need to learn in order to complete these assignments?

Use the following Activity Alignment Worksheet or a variation of the worksheet to plot which of the course SLOs each of the major assignments fulfills as well as the accompanying classroom activities.

COURSE NAME AND NUMBER: _____
Brief Description of the Assignment
Which SLOs the Assignment Addresses
Objectives: Skills/Tools/Subject Materials Needed for Students to Complete the Assignment

Step Four: Questions to Consider After Aligning Objectives with Major Assignments and Activities

Looking at the charts for each of your major assignments and activities, consider the following questions:

- Do my in-class activities, homework assignments, assigned reading and other exercises provide students the resources they need to successfully complete the assignment? Specifically, do I provide the necessary skills, tools, and/or content?
- Do my in-class activities, homework assignments, assigned reading and other exercises provide students adequate practice before the assignment is graded? If not, which need to be replaced or modified?

This concept of "practice" is one of the key principles to using SLOs as a means to strengthen your teaching. The emphasis is on what students can *do* with what they are learning rather than the knowledge itself. Exposing them to the course content without allowing them time to do something with it before they are evaluated on it will not lead to successful mastery of your course outcomes. Rather, students must practice the skills they are being evaluated on before that evaluation occurs. Secondly, students need feedback on what they've done. The National Research Council determined that timely, informative feedback facilitates practice and acquisition of proficiency of skills and deep learning. Such feedback can allow for formative improvement, not just summative judgment, to improve teaching and learning.

Granted, students will need good exposure to the content of your course in order to apply it in an assignment. However, place application at the center of your planning rather than focusing on coverage. *Coverage is a valid concern, but if there's only time for covering content and not applying it, how do you know that learning is actually taking place?* Perhaps you need to rethink how you are using class time and how students are first exposed to the content so that there is ample opportunity for skill demonstration and application. Research shows that students are most likely to retain what they've learned if they apply it.

ALIGNING COURSES WITH PROGRAM SLOS

Aligning course SLOs with Program SLOs enables you to assess overall program coherence. Completing a matrix like the example below ensures that students have been introduced to the outcome, had formative feedback and opportunities for practice, and are finally assessed concerning successful student learning.

After writing the Program SLOs, conduct an analysis of where those SLOs are introduced (I), practiced (P), and demonstrated at the mastery level (D) by plotting them on the matrix. Consider the following questions afterward. For practice, apply the questions to the following example:

- Was each of the outcomes sufficiently introduced?
- Did students have enough opportunities to practice before being expected to demonstrate an SLO at the mastery level?
- Do the outcomes reflect the priorities of the instructors? If not, which outcomes either need to be more frequently addressed in the curriculum or perhaps deleted altogether?

	Program SLOs				
Course	SLO1	SLO2	SLO3	SLO4	SLO5
100	I				I
101		I			P
102	P		P		P
103					P
200	P		P		
229					P
230			P		D
280					
290	D		D		D

MAPPING COURSES TO INSTITUTIONAL SLOS

An institutional student learning outcome is a knowledge, skill, ability, and/or attitude that students should attain by the end of their college experience. Here at Skyline, students who complete an A.A./ A.S. degree and/or transfer preparation should have mastered the following institutional SLOs: critical thinking, effective communication, citizenship, information and computer technology literacy, and lifelong wellness.

Mapping course-level SLOs with institutional SLOs enables you to identify which courses within your program may be contributing to student achievement of these outcomes, even if your discpline's approach differs from others'. Conversely, mapping gives us the means to determine whether our institutional SLOs reflect our priorities as instructors.

Now that Skyline has defined its institutional outcomes, input the names of the key courses in your program (i.e., courses in a prerequisite sequence, heavily enrolled courses, GE courses, etc.) and determine whether achieving those institutional outcomes are: (C) central to a course or (S) supported by the course. An SLO is "central" if it is essential to the course's intent and therefore an instructional priority, and it is "supported" if addressed but not quite at the level of importance as a "central" SLO. Leave the space blank if the institutional SLO does not apply.

*** Please note that the same process can be employed for programs that don't have courses, though programs will map their program outcomes to the institutional outcomes.*

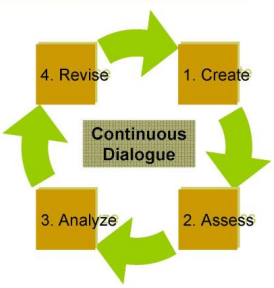
Skyline College Institutional Outcomes (v.2) **Key: (C) central to a course, (S) supported by a course, (blank) does not apply**		Course A	Course B	Course C	Course D	Course E	Course F	Course G	Course H
Citizenship:	Demonstrate scientific literacy concerning a range of global issues;								
	Articulate similarities and contrasts among cultures, demonstrating knowledge of and sensitivity to various cultural values and issues.								
	Develop attitudes central to lifelong learning: openness, flexibility, intellectual curiosity, and a broad perspective that values diversity of thought.								
	Demonstrate appropriate social skills in group settings, listening and being receptive to others' ideas and feelings, effectively contributing ideas, and demonstrating leadership by motivating others.								
	Demonstrate commitment to active citizenship.								
Computer Technology Literacy:	Use computer technology to organize, manage, integrate, synthesize, create, and communicate information and ideas in order to solve problems and function effectively in an information society.								

Critical Thinking:	Support claims with relevant and credible evidence.								
	Respond to bias; be fair-minded.								
	Apply accurate and logical analysis to achieve desired outcome.								
Effective Communication:	Comprehend, analyze, and respond appropriately to oral, written, and other sensory information.								
	Effectively express ideas through speaking and writing.								
Information Literacy:	Effectively locate and access information in numerous formats using a variety of appropriate search tools.								
	Evaluate the relevance, quality, and credibility of a wide variety of information sources using critical thinking and problem solving skills.								
Lifelong Wellness:	Demonstrate an understanding of physical fitness and its role in lifelong wellness.								
	Take personal responsibility for identifying academic and psycho-social needs, determining resources, and accessing appropriate services.								

SECTION THREE

Assessment Planning & Implementation

What You Can Expect



This section of the framework provides information on Skyline College's approach to student learning outcomes assessment. It includes guiding principles which outline how Skyline intends to use assessment along with a philosophy of good assessment practices. Also included in this section are tables that provide a list of direct and indirect measures of student learning, as well as appropriate instruments with which to evaluate them. These tables are not intended to be exhaustive lists, but they are meant to be extensive enough to give you a wide variety of choices, and to know the benefits and drawbacks of each. Keep in mind that a balanced assessment will include both direct and indirect measures. The last part of this section includes an assessment plan template with a guideline for using the template, sample assessment plans, a sample assessment report, a checklist to evaluate assessment plans, and a timeline for assessment creation and implementation.

Skyline College Guiding Principles of Assessment

Adapted from Palomar College Statement of Principles on Assessment, 2000

WHY DO ASSESSMENT?

The Skyline College Values Statement affirms the College's commitment to "academic rigor and quality with relevant, recent, and evolving curriculum" and our College Goals include development of "the scope, quality, accessibility, and accountability of instructional and student service offerings, programs and services." We adopted this strategic goal even before our accrediting body revised its accreditation standards to include "focus on outcomes and accomplishments, embracing a model of accreditation which requires assessment of resources, processes, and outcomes at the institutional level" (*Handbook of California Articulation Policies and Procedures, 2001 edition*). Thus our own commitment to assess student learning at the institutional level precedes and complements the mandates of accreditation. To carry out that commitment, Skyline will develop and continuously refine an institutional framework for assessing student learning and for using the results of such assessment to better serve our students.

WHAT IS ASSESSMENT?

By assessment we mean "the systematic collection, analysis, interpretation, and use of information to understand and improve teaching and learning…. Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain, and improve performance" (Angelo, p.7). To achieve these goals, assessment must be an ongoing, cyclical process requiring planning, execution, evaluation and monitoring on a minimum of four levels: course, student services, program, and institutional.

Skyline's definition of assessment is informed by our commitment to Open Access:
"We are committed to the availability of quality educational programs and services for every member of our community regardless of level of preparation, socio-economic status, cultural, religious or ethnic grounds, or disability. We are committed to providing students

with open access to programs and services that enable them to advance steadily toward their goals" (Skyline College Values Statement).

WHAT IS ASSESSMENT FOR?

At Skyline, we will use assessment primarily to understand, and thereby improve, student learning. More specifically, assessment can serve the following roles in the institution:

- To provide improved feedback, guidance, and mentoring to students in order to help them better plan and execute their educational programs.
- To provide improved feedback about student learning to support faculty and staff in their work.
- To help design and modify programs to better promote learning, access, and student success.
- To improve student learning and development in classes, in programs, and across the college.
- To develop common definitions and benchmarks for important student abilities that will enable us to act more coherently and effectively to promote student learning.
- To help us understand how different groups of students experience the college differently so as to adapt our courses and programs to the needs and capacities of all students.
- To help us understand how our different courses and programs affect students over time and to better coordinate and sequence the students' experience to produce deeper learning.

WHAT IS ASSESSMENT NOT FOR?

To clarify the nature of Skyline's commitment to learning assessment, we will specify some of the possible purposes of assessment that we will exclude from our approach.

- We will not use assessment as an end in itself. Assessment that does not help us to promote student learning is a waste of time.
- We will not use assessment of student learning punitively or as a means of determining faculty or staff salaries or rewards. The purpose of assessment is to evaluate student learning, not to reward or punish faculty or staff. Specifically, the rate of achievement of student learning outcomes in any section or course may not be used in the evaluation of any specific faculty member.

- We will not use any single mode of assessment to arbitrarily determine program decisions.
- We will not use assessment in a way that will impinge upon the academic freedom or professional rights of faculty. Individual faculty members must continue to exercise their best professional judgment in matters of grading and discipline.
- We will not assume that assessment can answer all questions about all students. We need not directly assess all students in order to learn about the effectiveness of our programs and policies.
- We will not assume that assessment is quantitative. While numerical scales or rubrics (such as the four-point grading scale) can be useful, their accuracy always depends on the clear understanding of the concepts behind the numbers. Often the best indicator of student learning can be expressed better as a narrative or a performance than as a number.
- We will not use assessment only to evaluate the end of the student's experience or merely to be accountable to outside parties. Assessment must be ongoing observation of what we believe is important; it must include both formative and summative data.
- We will not assume that assessment is only grading or testing.
- We will not use assessment to exclude students from access to our courses or programs, but will use information gained from assessment to improve student preparedness for effective learning in our programs.

WHO WILL DO ASSESSMENT?

Skyline's faculty and staff, in consultation with the entire college community, will shape and design institutional assessment activities and will identify the core knowledge and skills that our students need to master. The faculty and staff will likewise develop benchmarks by which student progress can be evaluated. These will be ongoing processes, open to modification and improvement. Not all assessment need be done in individual classes, and not every faculty and staff members need assess all of the core learning.

HOW WILL WE USE ASSESSMENT?

The following guidelines will govern the methodology we will employ at Skyline for institutional assessment:

- We will always seek multiple judgments of student learning rather than a single measure.

- We will make our criteria for assessment explicit and public so that students can self-assess and continuously improve their own performance.
- We will assess those skills and knowledge that our faculty, in consultation with the entire college community, judges to be important and valuable. This community may include transfer institutions and those who employ our graduates.
- We will assess the ongoing progress of students throughout their college experience.

Works Cited

Angelo. T., (1995). "Improving Classroom Assessment to Improve Learning: Guidelines from Research and Practice", Assessment Update. 7 (6). 1-2, 12-13. *Handbook of California Articulation Policies and Procedures* (2001 edition) http://www.curriculum.cc.ca.us/Curriculum/Transfer/Transfer_Main.htm

Adapted from Palomar College, http://www.palomar.edu/alp/principles.html, 2000.

ACTIVITIES AND ASSIGNMENTS THAT MEASURE STUDENT LEARNING

Below is a table that provides a list of direct and indirect measures of student learning. This table is not intended to be an exhaustive list, but it is meant to be extensive enough to give a wide variety of choices. Keep in mind that a balanced assessment will include both direct and indirect measures.

Direct Measures are methods of collecting information about student learning that require students to directly display their knowledge, skills, and/or abilities. Direct measures may require a systematic scoring system that employs a rubric.

Indirect Measures are methods of collecting information about student learning that asks students (or others) to reflect on their learning rather than demonstrate it. Indirect measures often involve collecting opinions and perceptions from surveys and/or focus groups, as well as gathering pertinent statistics from department or college records.

Following are direct and indirect measures on the course, program, institutional, and student services levels.

Level	Direct Measures	Indirect Measures
Course	☐ Course and homework assignments ☐ Examinations and quizzes ☐ Term papers and reports ☐ Observations of field work, internship performance, or service learning ☐ Research projects ☐ Class discussion participation ☐ Case study analysis ☐ Oral presentations, and performances ☐ Portfolios of student work ☐ Pre-test and Post-test ☐ Video/Audio tape evaluation ☐ Other: _____	☐ Course evaluations ☐ Test blueprints (outlines of the concepts and skills covered on tests) ☐ Percent of class time spent in active learning ☐ Number of student hours spent on service learning ☐ Number of student hours spent on homework ☐ Number of student hours spent at intellectual or cultural activities related to the course ☐ Number of student hours spent in contact with faculty outside the classroom ☐ Other: _____
Program	☐ Capstone projects, theses, exhibits, or performances ☐ Pass rates or scores on licensure, certification, or subject area tests ☐ Student publications or conference presentations ☐ Employer and internship supervisor ratings of students' performance ☐ Other: _____	☐ Focus group interviews ☐ Registration or course enrollment data ☐ Department or program review data ☐ Employer or alumni surveys ☐ Student perception surveys ☐ Proportion of upper-level courses relative to the same program at other institutions ☐ Job placement rates ☐ Number of faculty hours spent collaborating ☐ Internship evaluation ☐ Retention studies ☐ Transfer rates ☐ Graduation rate ☐ Course success rate ☐ Diversity statistics ☐ Other: _____

Level	Direct Measures	Indirect Measures
Institution	☐ Performance on tests of writing, critical thinking, or general knowledge ☐ Rubric (grading scale) scores for class assignments in GE, interdisciplinary core courses, or other courses required by all students ☐ Performance on achievement tests ☐ Explicit self-reflections on what students have learned as a result of required community service or other experiences ☐ Other: _____	☐ Locally-developed, commercial, or national surveys of student perceptions or self-report activities (e.g., National Survey of Student Engagement) ☐ Transcript studies that examine patterns and trends of course selection and grading ☐ Annual reports including institutional benchmarks ☐ Focus group evaluation ☐ Tracking Alumni honors/awards ☐ Retention studies ☐ Study abroad rates ☐ Transfer rates ☐ Graduation rate ☐ Course success rate ☐ Diversity statistics ☐ Job placement statistics ☐ Other: _____
Student Services	☐ Locally developed tests ☐ National standardized tests (e.g. CCSEQ, LASSI) ☐ National licensure exam ☐ Pre and post tests ☐ Evaluation of student work samples (portfolios, capstone projects, etc.) ☐ Evaluation of student performance on a case study or problem analysis ☐ Observation and evaluation of student behavior ☐ Externally reviewed internship ☐ Other: _____	☐ Home grown or standardized surveys (mailed, online, phone) ☐ Focus groups ☐ Staff and student journals ☐ Academic performance after transfer ☐ Exit interviews ☐ Analysis of college or departmental records ☐ Usage rates ☐ Student Satisfaction studies ☐ Other: _____

Adapted from: Middle States Accrediting Commission
Assessment of Student Learning: Options and Resources

SAMPLES OF DIRECT AND INDIRECT MEASURES AND ASSESSMENT INSTRUMENTS

Direct or Indirect	Major Assignment/Activity	Assessment Instruments (i.e. scoring system)
D	Problem solving or essay Exam/Quiz/Final	5 Point Analytic Rubric
D	Homework Assignment	10 Item Checklist
D	Project or Term Paper	5 Point Analytic Rubric
D	Performance	3 Point Holistic Rubric
I	Self-Reflective Survey	25 Item Survey with 7 point Likert Scale
D/I	Group-work	Observation of dynamics and conversations using a 3 Point Holistic Rubric or 10 point Checklist
I	LC or lab hours attended	Total Number of Hours in a Semester
D	Portfolio	3 Point Holistic Rubric
D	Essay	15 Point Checklist
D	Quiz/Exam/Final	25 Item multiple choice, true/false, or fill-in
I	Class/Lecture/Activity Attendance	Total number or percentage of attendance in a semester
D or I	Outside-of-class activity	5 Point Checklist

Student Activities and Assignments: Pros and Cons for Assessment

Student Activity/ Assignment	**Data** Direct or Indirect	**Domain** Cognitive, Psychomotor, or Affective	Formative or Summative	**Bloom's** Knowledge, Comprehension, Application or Analysis/ Synthesis/Eval		
Abbreviation	D or I	C, P or A	F or S	K, C, A, ASE	**Pros**	**Cons**
Multiple Choice Exam	D	C	F & S	K, C If carefully constructed A, S, & E	easy to grade; objective	reduces assessment to multiple choice answers
Licensing Exams	D	C	S	K, C, A	easy to score and compare	no authentic testing, may be outdated
Standardized Cognitive Tests	D	C	S	K, C, A?	comparable between students	heavily dependent on exposure to topics on test
Checklists	D	C, A, P	F, S	variable	very useful for skills or performances; students know exactly what is missing	can minimize large picture and interrelatedness; evaluation feedback is basically a yes/no - present/absent - without detail
Essay	D	C, A	F, S	K, C, A, ASE	displays analytical and synthetic thinking well	time consuming to grade, can be subjective
Case Study	D	C, A	F, S	K, C, A, ASE	displays analytical and synthetic thinking well; connects other knowledge to topic	creating the case study can be time consuming; dependent on student knowledge form multiple areas

Student Activity/ Assignment	**Data** Direct or Indirect	**Domain** Cognitive, Psychomotor, or Affective	Formative or Summative	**Bloom's** Knowledge, Comprehension, Application or Analysis/ Synthesis/Eval		
Problem Solving	D	C	F, S	K, C, A, ASE	displays analytical and synthetic thinking well; authentic if real world situations are used	difficult to grade due to multiple methods and potential multiple solutions
Oral Speech	D	C	F, S	variable K, C, A, ASE	easily graded with rubric; allows other students to see and learn what each student learned; connects general education goals with discipline-specific courses	can be difficult for ESL students; stressful for students; takes course time; must fairly grade course content beyond delivery
Debate	D	C, A	F, S	K, C, A, ASE	provides immediate feedback to the student; reveals thinking and ability to respond based on background knowledge and critical thinking ability	requires good rubric; more than one evaluator is helpful; difficult for ESL students stressful; for students takes course time
Product Creation & Special Reports	D	C, P, A	F, S	variable K, C, A, ASE	students can display skills, knowledge, and abilities in a way that is suited to them	must have clearly defined criteria and evaluative measures; "the look" cannot override the content
Flowchart or Diagram	D	C	F, S	C, A, ASE	displays original synthetic thinking on the part of the student; perhaps the best way to display overall high level thinking and articulation abilities	more difficult to grade, requiring a checklist or rubric for a variety of different answers; difficult for some students to do on the spot

Student Activity/ Assignment	**Data** Direct or Indirect	**Domain** Cognitive, Psychomotor, or Affective	Formative or Summative	**Bloom's** Knowledge, Comprehension, Application or Analysis/ Synthesis/Eval		
Portfolios	D	C, P	S	variable	provides the students with a clear record of their work and growth; best evidence of growth and change over time; students can display skills, knowledge, and abilities in a way that is suited to them;promotes self-assessment	time consuming to grade; different content in portfolio makes evaluating difficult and may require training; bulky to manage depending on size
Exit Surveys	D, I	A	S	ASE	provides good summative data; easy to manage data if Likert-scaled responses are used	Likert scales limit feedback; open-ended responses are bulky to manage
Performance	D	C, P	F, S	variable K, C, A, ASE	provides best display of skills and abilities; provides excellent opportunity for peer review; students can display skills, knowledge, and abilities in a way that is suited to them	stressful for students; may take course time; some students may take the evaluation very hard - evaluative statements must be carefully framed
Capstone project or course	D	C, P , A	F, S	ASE	best method to measure growth over time with regards to a course or program - cumulative	focus and breadth of assessment and understanding all the variables to produce assessment results are important; may result in additional course requirements; requires coordination and agreement on standards

Student Activity/ Assignment	**Data** Direct or Indirect	**Domain** Cognitive, Psychomotor, or Affective	Formative or Summative	**Bloom's** Knowledge, Comprehension, Application or Analysis/ Synthesis/Eval		
Team Project	D	C, A	F, S	variable K, C, A, ASE	connects general education goals with discipline-specific courses	must fairly grade individuals as well as team; grading is slightly more complicated; student interaction may be a challenge
Reflective self-assessment essay	D, I	C, A	S	ASE	provides invaluable ability to evaluate affective growth in students	must use evidence to support conclusions, not just self-opinionated assessment
Satisfaction and Perception Surveys	I	C, P, A	S	C, A, ASE	provides good indirect data; data can be compared longitudinally; can be used to determine outcomes over a long period of time	respondents may be influenced by factors other than those being considered; validity and reliability most be closely watched

Chart compiled by Bakersfield's Janet Fulks, Crafton Hills' Gary Williams, and recently retired Long Beach City College's Fred Trapp

GUIDING QUESTIONS FOR DEVELOPING THE ASSESSMENT PLAN

There are several things to consider when creating your assessment plan. Once you have chosen the SLO you intend to measure, you will need to identify who you will assess, which activity or assignment you will use, the type of assessment tool, and the minimum acceptable performance. To complete an assessment cycle, use the results to discuss with your colleagues if changes to the teaching/learning process in your course(s) are warranted, as well as whether the SLO or assessments need to be adjusted.

Use the following guiding questions to move through the assessment planning process.

Expected SLO

1. What is the student expected to do and/or know at the end of the course or program of study?

Assessment Sample

2. Who will be assessed (e.g. all sections, sampling of students across sections, selected sections) and how often?

Major Assignment/Activity

3. Which major activity or assignment will be used for assessment (e.g. final exam, demonstration or project, etc.)?

Assessment Instrument (i.e. systematic scoring system)

4. Which assessment instrument(s) will be used to collect data from the assignment or activity (e.g. Likert scale, rubric, checklist, survey, etc.)?

Performance Criteria

5. What are the performance standards that judge whether a student has achieved a given level of knowledge or skill proficiency?
6. How do you know when a student has achieved the knowledge, skill, or ability the SLO seeks to impart?

Outcome Results

7. What are the results of the assessment?
8. How do the results compare to any baseline or benchmark data previously collected?

Analysis & Action

9. How will the results be used to inform teaching, learning and/or services?
10. How will you, your program or the institution follow up on the results?
11. With whom will the results be shared?

SLO Assessment Plan - Sample

Department: Speech **Course: Speech 100**

Expected SLO	Assessment Sample, Major Assignment/Activity, Assessment Instrument & Performance Criteria	Term
1. Upon completion of this course, students should be able to critically listen to a publicly delivered speech and analyze the credibility of the content and the effectiveness of delivery.	Assessment Sample: A representative sample of sections within Speech 100 will be selected to evaluate SLO #1 as follows: 1.1 Major Assignment: In-class oral feedback and analysis of taped speeches Assessment Instrument: 25-point Analytic Rubric Performance Criteria: 70% will achieve a score of ≥17 1.2 Major Assignment: Written analysis of speech viewed outside of class Assessment Instrument: 5-point Holistic Rubric Performance Criteria: 70% will achieve a score of ≥3. 1.3 Major Assignment: In-class written critique of colleagues speeches Assessment Instrument: 5 point rubric Performance Criteria: 70% will achieve a score of ≥3.	1.1 SP 06, FA 06 1.2 FA 06 1.3 SP 06
2. Upon completion of this course, students will be able to conduct in-depth research on a topic of social or scientific significance, then write a well-organized outline and present a coherent extemporaneous oral presentation with confidence.	Assessment Sample: A representative sample of sections within Speech 100 will be selected to evaluate SLO #2 as follows: 2.1 Major Assignment: In-class oral presentation Assessment Instrument: 25-point Analytic Rubric (PTA) Performance Criteria: 70% will achieve a score of ≥3. 2.2 Major Assignment: Written outlines with bibliography Assessment Instrument: 10-point Checklist Performance Criteria: 70% will achieve a score of ≥7. 2.3 Major Assignment: Self report surveys Assessment Instrument: 5-point Analytic Rubric (PTA) Performance Criteria: 70% will achieve a score of ≥3	2.1 SP 06, FA 06 2.2 SP 06, FA 06 2.3 FA 06

SLO Assessment Report – Sample

Department: Speech **Course: Speech 100** **Term: Spring 2006**

SLO	Outcome Results	Analysis & Action
3. Research, through a wide variety of sources, current topics of social or scientific significance, then write a detailed, well-organized outline on the topic and present a coherent, confident extemporaneous oral presentation.	2.1 65 % of students achieved ≥3 on the oral presentation. 2.2 60% of students achieved 7 ≥ on the outline. 2.3 75% of students reported a score of ≥ 3 on the survey.	2.1 The criterion of 70% of students will achieve ≥3 was not met. The following actions will be taken during the Fall 2006: 1) The rubric will be evaluated by the Speech faculty to ensure that the primary traits are aligned with the SLO and if necessary the rubric and/or the SLO will be modified, and 2) The criteria may or may not need to be adjusted to better reflect the trend in the learning outcome. 2.2. The criterion of 70% of students will achieve a ≥ 7 was not met. The following actions will be taken in Fall 06. 1.) The checklist will be evaluated to ensure that expected criteria are discreetly defined. 2.) Instructors will discuss possible rough draft submission of outlines to gain feedback prior to final submission. 2.3 The criterion of 70% of students will achieve a score of ≥3 was met. The following actions will be taken in SP 07: 1) Administer the same survey, noting the results and any differences.

SLO Assessment Plan

Department: Admissions and Records

Expected SLO	Assessment Sample, Major Assignment/Activity, Assessment Instrument & Performance Criteria	Term
1. Students will demonstrate comprehension of the contents of the Skyline College Catalog: our academic contract with the student.	Assessment Sample: All students who attend the Orientation meetings or on-line Orientations plus a sample of first-time students who do not attend. 1.1 Major Activity: Petitions Received Assessment Instrument: Number of Policy, Regs. and Deadline Petitions Performance Criteria: 10% decrease annually 1.2 Major Activity: Orientation-Info provided and reviewed Assessment Instrument: Pre-post Test of Policies, Regs. and Deadlines Performance Criteria: 80% of students will achieve 75% comprehension 1.3 Major Activity: Orientation-Problem-solving Scenario Assessment Instrument: Peer Critique Performance Criteria: 75% of students will achieve 70% accuracy	1.1 FA and SP 1.2 FA and SP 1.3 SP and SP
2. Students attending the application workshop will be able to articulate their needs for classes, programs and services.	Assessment Sample: All students who attend the Application Workshop. 2.1 Major Activity: Application Workshop Assessment Instrument: Opinion Survey of A & R services Performance Criteria: 80% of students will have a 75% favorable opinion 2.2 Major Activity: Application Workshop Assessment Instrument: Pre-post Test of Application Process Performance Criteria: 80% of students will achieve 75% comprehension 2.3 Major Activity: Application Completion Assessment Instrument: Application Processing Performance Criteria: 10% reduction of errors annually.	2.4 FA and SP 2.5 FA and SP 2.6 SP and SP

SLO Assessment Plan - Template

Department: **Course:**

Expected SLO	Assessment Sample, Major Assignment/Activity, Assessment Instrument & Performance Criteria	Term
1.	Assessment Sample: 1.4 Major Assignment/Activity: Assessment Instrument: Performance Criteria:	1.1

SLO Assessment Report Template

Department: **Course:** **Term:**

Expected SLO	Outcome Results	Analysis & Action
1.	1.1	1.1

SLO ASSESSMENT PLAN CHECKLIST

Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain and improve performance. (T. Angelo, 1995).

	Yes	No
1. Contains a balance of direct and indirect assessment methods overall.		
2. Contains a mix of quantitative and qualitative measures overall.		
3. Contains mostly formative assessments for mid-course corrective action.		
4. Contains links between major assignments/activities and assessments.		
5. Contains three different ways to assess each SLO.		
6. Contains criteria that are based on realistic and meaningful benchmarks.		
7. Contains a variety of assessment methods both tried and true and new.		
8. Contains suggested approaches for sampling or systematically evaluating the student learning outcome.		
RECOMMENDATIONS, IF ANY:		

TIMELINE FOR SLO/ASSESSMENT CREATION AND IMPLEMENTATION

The SLOAC committee realizes that faculty and staff development of SLOs and Assessment Plans is a large and daunting project. In an attempt to break the process up into smaller, discrete tasks that may be more manageable, the SLOAC committee has suggested a six-year cycle that provides a structure to keep your department or program up to date with the adopted Timeline for SLO/Assessment Creation and Implementation (hereafter referred to as the "Timeline"). *This six-year cycle is a recommended minimum threshold.*

On the following pages is a Timeline template for you to use with your own department courses and a sample Timeline drawn up using a fictitious "Liberal Studies Department."

The Timeline charts the six-year cycle assigning year one to the 2008-2009 academic school year. The tasks of developing/writing SLOs and Assesssment plans is assigned to the spring semester and specifically the newly acquired spring flex day designated for SLOAC activities. Since faculty was asked to develop SLO and an Assessment Plan for at least one course by Fall 2008, the spring semester 2008 (or year "0") is the beginning of the year one cycle. The task of implementing the Assessment plans by gathering data is assigned to the following Fall semester. In our first year cycle, Fall 2008 is the semester assigned to collecting data from the Assessment Plan developed in Spring 2008. By starting our cycle in the Spring semester, faculty and staff are given a time "cushion" of the summer months to fine tune the assessment plans, develop individual assessments or catch up on SLO/Assessment Plan creation if not completed in the Spring semester. The following spring semester returns us to the SLO/Assessment Plan creation for the next course. The spring semester flex day also allocated time for the analysis and evaluation of data collected in the previous fall semester, thus closing the SLOAC loop discussed at the beginning of this document. In our first year cycle, the analysis and evaluation of data collected from Fall 2008 is assigned to Spring 2009 flex day at which we will also adjust that plan as needed and write SLO and Assessment Plan for another course.

In addition to the Timeline, the SLOAC committee has come up with recommendations to make the implementation of these plans more manageable by limiting the number of SLOs to assess, the number of assessments for a specific SLO, and the number of courses for which to assess SLOs.

The SLOAC committee recommends each Department and/or Program begin creating an assessment timeline by determining the core courses in your department or program. Core courses are the courses most central to a Department and/or Program matriculation plan for transfer students. Core courses can be prerequisites for other courses in the department and/or program, or they could be the courses with the most transferability to four-year institutions. To make ongoing assessment practical, these courses should be offered regularly in the department. The SLO committee recommends that each department and/or program try to limit their core courses to no more than six. In addition, the SLO committee recommends that faculty and staff limit the number of SLOs created for a course to three AND the number of assessments of a single SLO to three. The committee feels that using more than three assessments on more than three SLOs for multiple courses may quickly become overwhelming in its organization and detail, thus compromising assessment quality and results.

Let's take a look at the sample Timeline for the fictitious "Liberal Studies Department."

On the first page, we see that Prof. Chuckles and his colleagues have selected six core courses from their Liberal Studies department: LIB 100, LIB 200, LIB 300, LIB 400, LIB 500, LIB 600. For each course they have created only three SLOs: SLO 1, SLO 2, SLO 3 and for each SLO, they have identified three assessments labeled with the number of the SLO. For example, LIB 100/SLO 1 has three assessments: Ass. 1.1, Ass 1.2, Ass 1.3

On the second page, these SLOs and assessments have been charted onto the Timeline.

In Year "0" (Spring 2008), Prof. Chuckles and his colleagues met to write SLOs and an assessment plan for LIB 100.

In Year "1" (Fall 2008), Prof. Chuckles and his colleagues that teach LIB 100 collected data from their assessments, but focused on Ass. 1.1 for analysis and evaluation in the following Spring. (The SLO committee recommends limiting the analysis to one assessment per SLO per six-year cycle in order not to be overwhelmed when three SLOs are being analyzed simultaneously.)

In the Spring semester of 2009 (still Year "1"), a flex day has been set aside for faculty and staff work on SLO creating and implementation. During this flex day, Prof. Chuckles plans to meet with his colleagues. At their meeting, they plan to accomplish the following: (1) analyze and evaluate and their assessment findings for LIB 100 SLO 1 (2) adjust their LIB 100 assessment plan, if needed, and (2) write SLOs and an Assessment Plan for LIB 200. This prepares the Liberal Studies department for the Fall semester of Year "2" (2009-2010) in which the Prof. Chuckles and his colleagues will collect assessment data on the SLO 2 from LIB 100 AND the newly-created SLO 1 from LIB 200 from Spring 2009. In the Spring of 2010, the Liberal Studies department will meet again to analyze and evaluate data collected from assessments completed in Fall 2009. Assessment plans for LIB 100 and 200 will be adjusted as needed, and SLOs and an Assessment plan for LIB 300 will be drawn up.

In Year "3" (2010-2011), the maximum number of simultaneous assessments will be reached. Prof. Chuckles and his colleagues will be collecting data from SLO 3 of LIB 100, SLO 2 of LIB 200, and the newly-created SLO 1 of LIB 300. At the Spring 2011 flex day, the SLOs for LIB 100 will be adjusted for the last time in the six-year cycle. SLOs and an Assessment Plan will be created for a new course - LIB 400, and the cycle will continue. In the following year, no assessments will be done on SLOs for LIB 100. The SLOAC committee recommends this limitation so that departments/programs will not be simultaneously assessing more than three courses per year.

TIMELINE FOR SLO/ASSESSMENT CREATION AND IMPLEMENTATION TEMPLATE

Name of Department/Program: LIBERAL STUDIES DEPARTMENT

Name of Professor: PROF. CHUCKLES

SLOAC Committee Recommendations:

1. Six core courses per department/program
2. Three SLOs MAXIMUM per course
3. Three assessments MAXIMUM per SLO

Core courses in Department/Program:

LIB 100
LIB 200
LIB 300
LIB 400
LIB 500
LIB 600

For each course, SLOs and their assessments are designated SLO # Ass. #.1, Ass. #.2, Ass. #.3
For example, a complete assessment plan for LIB 100 would include up to three SLOs each with up to three assessments (nine assessments per course maximum).

LIB 100	LIB 100	LIB 100
SLO 1	SLO 2	SLO 3
Ass. 1.1	Ass. 2.1	Ass. 3.1
Ass. 1.2	Ass. 2.2	Ass. 3.2
Ass. 1.3	Ass. 2.3	Ass. 3.3

The Assessment Fairy says, "Focus on evaluating SLOs not evaluating assessments!"

YEAR IN CYCLE	ACADEMIC YEAR DATES	FALL SEMESTER						SPRING SEMESTER
0	2007-2008 no flex day	* indicates specific SLO assessment focus for analyze/evaluate/adjust cycle						Write SLOs for LIB 100 Write Assessment Plan for LIB 100
1 7	2008-2009 spring flex day 2014-2015 spring flex day	Assess LIB100 SLO 1 *Ass.1.1 Ass.1.2 Ass.1.3				Assess LIB500 SLO 3 *Ass.3.1 Ass.3.2 Ass.3.3	Assess LIB600 SLO 2 *Ass.2.1 Ass.2.2 Ass.2.3	Analyze data from LIB 100 SLO 1 assessments Evaluate data from LIB 100 SLO 1 assessments Adjust LIB 100 SLO 1 & LIB 100 Assessment Plan as needed Write/Review (on repeat) SLOs for LIB 200 Write/Review (on repeat) Assessment Plan for LIB 200
2	2009-2010 spring flex day	Assess LIB 100 SLO 2 *Ass.2.1 Ass.2.2 Ass.2.3	Assess LIB200 SLO 1 *Ass.1.1 Ass.1.2 Ass.1.3				Assess LIB 600 SLO 3 *Ass.3.1 Ass.3.2 Ass.3.3	Analyze data from LIB 100 SLO 2, 200 SLO 1 assessments Evaluate data from LIB 100 SLO 2, 200 SLO 1assessments Adjust LIB 100 SLO 2, 200 SLO & LIB 200 Assessment Plan as needed Write SLOs for LIB 300 Write Assessment Plan for LIB 300
3	2010-2011 spring flex day	Assess LIB 100 SLO 3 *Ass.3.1 Ass.3.2 Ass.3.3	Assess LIB 200 SLO 2 *Ass.2.1 Ass.2.2 Ass.2.3	Assess LIB300 SLO 1 *Ass.1.1 Ass.1.2 Ass.1.3				Analyze data from LIB 100 SLO 3, 200 SLO 2, 300 SLO 1 assessments Evaluate data from LIB 100 SLO 3, 200 SLO 2, 300 SLO 1 assessments Adjust LIB 100 SLO 3, 200 SLO 2, 300 SLO 1 & LIB 300 Assessment Plan as needed Write SLOs for LIB 400 Write Assessment Plan for LIB 400
4	2011-2012 spring flex day		Assess LIB 200 SLO 3 *Ass.3.1 Ass.3.2 Ass.3.3	Assess LIB 300 SLO 2 *Ass.2.1 Ass.2.2 Ass.2.3	Assess LIB400 SLO 1 *Ass.1.1 Ass.1.2 Ass.1.3			Analyze data from LIB 200 SLO 3, 300 SLO 2, 400 SLO 1 assessments Evaluate data from LIB 200 SLO 3, 300 SLO 2, 400 SLO 1assessments Adjust LIB 200 SLO 3, 300 SLO 2, 400 SLO 1 & LIB 400 Assessment Plan as needed Write SLOs for LIB 500 Write Assessment Plan for LIB 500
5	2012-2013 spring flex day			Assess LIB 300 SLO 3 *Ass.3.1 Ass.3.2 Ass.3.3	Assess LIB 400 SLO 2 *Ass.2.1 Ass.2.2 Ass.2.3	Assess LIB 500 SLO 1 *Ass.1.1 Ass.1.2 Ass.1.3		Analyze data from LIB 300 SLO 3, 400 SLO 2, 500 SLO 1 assessments Evaluate data from LIB 300 SLO 3, 400 SLO 2, 500 SLO 1 assessments Adjust LIB 300 SLO 3, 400 SLO 2, 500 SLO 1 & LIB 500 Assessment Plan as needed Write SLOs for LIB 600 Write Assessment Plan for LIB 600

6	2013-2014 spring flex day				Assess LIB 400 SLO 3 *Ass.3.1 Ass.3.2 Ass.3.3	Assess LIB 500 SLO 2 *Ass.2.1 Ass.2.2 Ass.2.3	Assess LIB 600 SLO 1 *Ass.1.1 Ass.1.2 Ass.1.3	Analyze data from LIB 400 SLO 3, 500 SLO 2, 600 SLO 1 assessments Evaluate data from LIB 400 SLO 3, 500 SLO 2, 600 SLO 1 assessments Adjust LIB 400 SLO 3, 500 SLO 2, 600 SLO 1 & LIB 600 Assessment Plan as needed Review SLOs for LIB 100 Review Assessment Plan for LIB 100
7	2014-2015 spring flex day	Assess LIB100 SLO 1 Ass.1.1 *Ass.1.2 Ass. 1.3				Assess LIB500 SLO 3 *Ass.3.1 Ass. 3.2 Ass. 3.3	Assess LIB600 SLO 2 *Ass.2.1 Ass. 2.2 Ass. 2.3	Analyze data from LIB 500 SLO 3, 600 SLO 2, 100 SLO 1 assessments Evaluate data from LIB 500 SLO 3, 600 SLO 2, 100 SLO 1assessments Adjust 500 SLO 3, 600 SLO 2, 100 SLO 1& LIB 100 Assessment Plan as needed Review SLOs for LIB 200 Review Assessment Plan for LIB 200
8	2015-2016 spring flex day	Assess LIB 100 SLO 2 Ass. 2.1 *Ass. 2.2 Ass. 2.3	Assess LIB200 SLO 1 Ass.1.1 *Ass.1.2 Ass. 1.3				Assess LIB 600 SLO 3 *Ass. 3.1 Ass. 3.2 Ass. 3.3	Analyze data from LIB 600 SLO 3, 100 SLO 2, 200 SLO 1 assessments Evaluate data from LIB 600 SLO 3, 100 SLO 2, 200 SLO 1 assessments Adjust LIB 600 SLO 3, 100 SLO 2, 200 SLO 1 & LIB 200 Assessment Plan as needed Review SLOs for LIB 300 Review Assessment Plan for LIB 300
9	2016-2017 spring flex day	Assess LIB 100 SLO 3 Ass. 3.1 *Ass. 3.2 Ass. 3.3	Assess LIB 200 SLO 2 Ass. 2.1 *Ass. 2.2 Ass. 2.3	Assess LIB300 SLO 1 Ass.1.1 *Ass.1.2 Ass. 1.3				Analyze data from LIB 100 SLO 3, 200 SLO 2, 300 SLO 1 assessments Evaluate data from LIB 100 SLO 3, 200 SLO 2, 300 SLO 1 assessments Adjust LIB 100 SLO 3, 200 SLO 2, 300 SLO 1 & LIB 300 Assessment Plan as needed Review SLOs for LIB 400 Review Assessment Plan for LIB 400
10	2017-2018 spring flex day		Assess LIB 200 SLO 3 Ass. 3.1 Ass. 3.2 *Ass. 3.3	Assess LIB 300 SLO 2 Ass. 2.1 Ass. 2.2 *Ass. 2.3	Assess LIB400 SLO 1 Ass.1.1 Ass.1.2 *Ass.1.3			Analyze data from LIB 200 SLO 3, 300 SLO 2, 400 SLO 1 assessments Evaluate data from LIB 200 SLO 3, 300 SLO 2, 400 SLO 1assessments Adjust LIB 200 SLO 3, 300 SLO 2, 400 SLO 1 & LIB 400 Assessment Plan as needed Review SLOs for LIB 500 Review Assessment Plan for LIB 500

TIMELINE FOR SLO/ASSESSMENT CREATION AND IMPLEMENTATION TEMPLATE

Name of Department/Program: _____

Name of Professor (s): _____

SLOAC Committee Recommendations:

1. Six core courses per department/program
2. Three SLOs MAXIMUM per course
3. Three assessments MAXIMUM per SLO

Core courses in Department/Program:

_____

_____

_____

_____

_____

_____

For each course, SLOs and their assessments are designated SLO # Ass. #.1, Ass. #.2, Ass. #.3
For example, a complete assessment plan for LIB 100 would include up to three SLOs each with up to three assessments (nine assessments per course maximum).

LIB 100	LIB 100	LIB 100
SLO 1	SLO 2	SLO 3
Ass. 1.1	Ass. 2.1	Ass. 3.1
Ass. 1.2	Ass. 2.2	Ass. 3.2
Ass. 1.3	Ass. 2.3	Ass. 3.3

The Assessment Fairy says, "Focus on evaluating SLOs not evaluating assessments!"

YEAR IN CYCLE	ACADEMIC YEAR DATES	FALL SEMESTER						SPRING SEMESTER
0	2007-2008 no flex day	* indicates specific SLO assessment focus for analyze/evaluate/adjust cycle						Write SLOs for _____ Write Assessment Plan for _____
1 *7*	2008-2009 spring flex day *2014-2015* *spring flex day*							Analyze data from _____ assessments Evaluate data from _____ assessments Adjust _____ & _____Assessment Plan as needed Write/*Review (on repeat)* SLOs for _____ Write/*Review (on repeat)* Assessment Plan _____
2	2009-2010 spring flex day							Analyze data from _____ assessments Evaluate data from _____assessments Adjust _____ & _____ Assessment Plan as needed Write SLOs for _____ Write Assessment Plan for _____
3	2010-2011 spring flex day							Analyze data from _____ assessments Evaluate data from _____assessments Adjust _____ & _____ Assessment Plan as needed Write SLOs for _____ Write Assessment Plan for _____
4	2011-2012 spring flex day							Analyze data from _____ assessments Evaluate data from _____assessments Adjust _____ & _____ Assessment Plan as needed Write SLOs for _____ Write Assessment Plan for _____
5	2012-2013 spring flex day							Analyze data from _____ assessments Evaluate data from _____assessments Adjust _____ & _____ Assessment Plan as needed Write SLOs for _____ Write Assessment Plan for _____
6	2013-2014 spring flex day							Analyze data from _____ assessments Evaluate data from _____assessments Adjust _____ & _____ Assessment Plan as needed Write SLOs for _____ Write Assessment Plan for _____

Appendix A:

Definition of Terms

Accommodations: Modifications in the way assessments are designed or administered to create fair testing conditions for students with learning disabilities. Students are entitled to accommodations after documenting their disabilities through DSP&S.

Active Learning. Active learning is an approach in which students are participating in learning beyond passively absorbing knowledge such as in a didactic session. Actively learning students solve problems, apply knowledge, work with other students, and engage the material to construct their own understanding and use of the information. Examples of active learning methods include those methods where deeper thinking and analysis are the responsibility of the student, and the faculty member acts as a coach or facilitator to achieve specified outcomes. Examples of active learning include inquiry-based learning, case-study methods, project development, modeling, collaborative learning, problem-based learning, brainstorming, and simulations.

***Analytic Scoring*:** Evaluating student work across multiple dimensions of performance rather than from an overall impression (holistic scoring). In analytic scoring, individual scores for each dimension are scored and reported. For example, analytic scoring of a history essay might include scores of the following dimensions: use of prior knowledge, application of principles, use of original source material to support a point of view, and composition. An overall impression of quality may be included in analytic scoring.

Anchor : A sample of student work that exemplifies a specific level of performance. Raters use anchors to score student work, usually comparing student performance to the anchor. For example, if student work was being scored on a scale of 1-5, there would typically be anchors (previously scored student work), exemplifying each point on the scale.

Assessment. Assessment refers to methods used by a faculty member, department, program or institution to generate and collect data for evaluation of processes, courses, and programs with the ultimate purpose of evaluating overall educational quality and improving student learning. Results of assessment may include both quantitative and qualitative data.

Attitudinal Outcomes. These outcomes relate to development of certain values or changes in beliefs, often through questionnaires.

Authentic Assessment. Authentic Assessment evaluates students' ability to use their knowledge and to perform tasks that approximate those found in the work place or other venues outside the classroom. Designed to allow students to actively demonstrate what they know rather than recognize or recall answers to questions.

Basic Skills: below college-level reading, writing, ESOL, mathematics, and student success skills: any skill, ability, or understanding that is necessary for students to succeed at college-level courses.

Benchmark.: A detailed description of a specific level of student performance expected of students at particular stages or development levels. Benchmarks are often represented by samples of student work. A set of benchmarks can be used as "checkpoints" to monitor progress toward meeting performance goals within and across levels.

Classroom Assessment Techniques (CAT). CATs are "simple tools for collecting data on student learning in order to improve it" (*Classroom Assessment Techniques*, Angelo & Cross, 1993, p. 26). CATs are short, flexible, classroom techniques that provide rapid, informative feedback to improve classroom dynamics by monitoring learning, from the student's perspective throughout the semester

Classroom-based Assessment. Classroom-based assessment is the formative and summative evaluation of student learning within a single course. This assessment involves evaluating the curriculum as designed, taught, and learned. It entails the collection of data aimed at measuring successful learning in the individual course and improving instruction with a goal to improving learning.

Core Competencies. A core competency is a skill, ability or knowledge that students should attain by the end of a course, program or set of services. This may include: critical thinking, written and oral communication, awareness of human diversity and personal and social responsibility.

Criteria. Guidelines, rules, characteristics, or dimensions that are used to judge the quality of student performance. Criteria indicate what we value in student responses, products or performances. They may be holistic, analytic, general, or specific.

Criterion-based Assessments. Instructors evaluate or score such assessment using a set of criteria to appraise work. Criterion-referenced evaluation is based on proficiency, not subjective measures such as improvement.

Direct Measures. Methods of collecting information about student learning that require students to display their knowledge, skills, and/or abilities. Direct measures often require a systematic scoring system that employs a rubric.

Embedded Assessment. Embedded assessment occurs within the regular class or curricular activity. Class assignments linked to student learning outcomes through primary trait analysis serve as grading and assessment instruments. Individual questions on exams can be embedded in numerous classes to provide departmental, program, or institutional assessment information.

Evidence of Performance. Quantitative or qualitative, direct or indirect data that provide information concerning the extent to which a course, program, student service and institution meet their established and publicized goals.

Equity. The extent to which an institution or program achieves a comparable level of outcomes, direct and indirect, for various groups of enrolled students; the concern for fairness, i.e., that assessments are free from bias or favoritism. An assessment that is fair enables all students to show what they know or can do.

Formative Assessment. Formative assessment generates useful feedback for development and improvement. The purpose is to provide an opportunity to perform and receive guidance (such as in-class assignments, quizzes, discussion, lab activities, etc.) that will improve or shape a final performance. *See* Summative assessment.

Holistic Scoring. A scoring process in which a score is based on an overall assessment of a finished product that is compared to an agreed-upon standard for that task.

Homegrown or Local Assessment. This type of assessment is developed and validated for a specific purpose, course, or function and is usually criterion-referenced to promote validity, e.g. a department placement or exit exam. *See* Standardized Assessment.

Indirect Assessment. Methods of collecting information about student learning that asks students (or others) to reflect on their learning rather than demonstrate it. Indirect measures often involve collecting opinions and perceptions from surveys and/or focus groups, as well as gathering pertinent statistics from department or college records.

Information Competency. Information competency is the ability to access, analyze, and determine the reliability of information on a given topic.

Likert Scale. The Likert scale assigns a numerical value to responses in order to quantify subjective data. The responses are usually along a continuum such as responses of strongly disagree, disagree, neutral, agree, or strongly agree and are assigned values such as 1-5.

Metacognition. Metacognition is the act of thinking about one's own thinking and regulating one's own learning. It involves critical analysis of how decisions are made. Vital material is consciously learned and acted upon.

Norming. The process of educating raters to evaluate student work and produce dependable scores. Typically, this process uses anchors to acquaint raters with criteria and scoring rubrics. Open discussions between raters and the trainer help to clarify scoring criteria and performance standards, and provide opportunities for raters to practice applying the rubric to student work. Rater training often includes an assessment of rater reliability that raters must pass in order to score actual student work.

Norm-referenced Assessment. An assessment where student performance or performances are compared to a larger group. Usually the larger group or "norm group" is a national sample representing a wide and diverse cross-section of students. Students, schools, districts, and even states are compared or rank-ordered in relation to the norm group. The purpose of a norm-referenced assessment is usually to sort students and not to measure achievement towards some criterion of performance.

Performance-based Assessment (also known as *Authentic Assessment*). Items or tasks that require students to apply knowledge in real-world situations.

Placement Testing. The process of assessing the basic skills proficiencies or competencies of entering college students.

Primary Trait Analysis (PTA). PTA is the process of identifying major traits or characteristics that are expected in student work. After the primary traits are identified, specific criteria with performance standards are defined for each trait.

Portfolio. **A** representative collection of a student's work, including some evidence that the student has evaluated the quality of his or her own work.

Program. A program is a cohesive group of courses or activities that support a common set of outcomes.

Program Assessment. Assessing the student learning outcomes or competencies of students in achieving a certificate/degree beyond basic skills and general education.

Program Review. A process of systematic evaluation of multiple variables of effectiveness and assessment of student learning outcomes of an instructional or student services program.

Prompt. A short statement or question that provides students a purpose for writing; also used in areas other than writing.

Qualitative Data. Qualitative data are data collected as descriptive information, such as a narrative or portfolio. These types of data, often collected in open-ended questions, feedback surveys, or summary reports, are more difficult to compare, reproduce, and generalize. They are bulky to store and to report; however, they can offer insightful information, often providing potential solutions or modifications in the form of feedback. Qualitative data, such as opinions, can be displayed as numerical data by using Likert-scaled responses that assigns a numerical value to each response (e.g. 5 = strongly agree to 1 = strongly disagree).

Quantitative Data. Quantitative data objectively measures a quantity (i.e. number) such as students' scores or completion rates. These data are easy to store and manage; they can be generalized and reproduced but have limited value due to the rigidity of the responses and must be carefully constructed to be valid.

Reliability. Reliability refers to the reproducibility of results over time or a measure of the consistency when an assessment tool is used multiple times. In other words, if the same person took a test five times, the data should be consistent. This refers not only to reproducible results from the same participant but also to repeated scoring by the same or multiple evaluators.

Rubric. A rubric is a set of criteria used to determine scoring for an assignment, performance, or product. Rubrics may be holistic, providing general guidance, or analytical, assigning specific scoring point values. Descriptors provide standards for judging the work and assigning it to a particular place on the continuum.

Standardized Assessments. Assessments developed through a consistent set of procedures for designing, administering, and scoring. The purpose of standardization is to assure that all students are assessed under the same conditions so that their scores have the same meaning and are not influenced by differing conditions.

Student Learning Outcomes (SLO). An SLO is a clear statement of what a student should learn and be able to demonstrate upon completing a course or program. It describes the assessable and measurable knowledge, skills, abilities or attitudes that students should attain by the end of a learning process.

Summative Assessment. A summative assessment is a final determination of knowledge, skills, and abilities. This could be exemplified by exit or licensing exams, senior recitals, or any final evaluation that is not created to provide feedback for improvement but is used only for final judgments. A midterm exam may fit in this category if it is the last time the student has an opportunity to be evaluated on specific material. *See* Formative assessment.

Validity. The extent to which an assessment measures what it is supposed to measure. A valid standards-based assessment is aligned with the *standards* intended to be measured, provides an accurate and reliable estimate of students' performance relative to the standard, and is fair.

Adapted from:

http://online.bakersfieldcollege.edu/courseassessment/Definitions.htm

CRESST Assessment Glossary: National Center for Research on Evaluation, Standards, and Student Testing.
http://cresst96.cse.ucla.edu/CRESST/pages/media.htm

Assessment Handbook, Los Medanos College.
http://www.losmedanos.net/groups/research/assessmenthandbook.pdf

Appendix B:

Bloom's Taxonomy

Cognitive Domain

Learning Outcomes Related To Knowledge

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Student remembers or recognizes information or specifics as communicated with little personal assimilation.	Student grasps the meaning behind the information and interprets, translates, or comprehends the information.	Student uses information to relate and apply it to a new situation with minimal instructor input.	Student discriminates, organizes, and scrutinizes assumptions in an attempt to identify evidence for a conclusion.	Student creatively applies knowledge and analysis to integrate concepts or construct an overall theory.	Student judges or evaluates information based upon standards and criteria, values and opinions.
Cite Label List Enumerate Identify Imitate Match Name Quote Recall Reproduce State Write	Convert Define Describe Discuss Estimate Explain Generalize Identify Illustrate Locate Paraphrase Restate Summarize	Apply Chart Compute Demonstrate Determine Dramatize Establish Make Manipulate Prepare Project Solve Use	Analyze Compare Contrast Correlate Diagram Dissect Differentiate Distinguish Infer Investigate Limit Outline Separate	Assemble Create Construct Design Develop Formulate Generate Hypothesize Initiate Invent Modify Reframe Synthesize	Access Appraise Conclude Critique Decide Defend Diagnose Evaluate Judge Justify Rank Recommend Support

Basic Knowledge Level

More Sophisticated Higher Level Thinking Critical Thinking

Psychomotor Domain

Learning Outcomes Related To Skills

Observe	Model	Recognize Standards	Correct	Apply	Coach
Students translate sensory input into physical tasks or activities.	Students are able to replicate a fundamental skill or task.	Students recognize standards or criteria important to perform a skill or task correctly.	Students use standards to evaluate their own performances and make corrections.	Students apply this skill to real life situations.	Students are able to instruct or train others to perform this skill in other situations.
Hear Identify Observe See Smell Taste Touch Watch *Usually no outcomes or objectives written at this level.	Attempt Copy Follow Imitate Mimic Model Reenact Repeat Reproduce Show Try	Check Detect Discriminate Differentiate Distinguish Notice Perceive Recognize Select	Adapt Adjust Alter Change Correct Customize Develop Improve Manipulate Modify Practice Revise	Build Compose Construct Create Design Originate Produce	Demonstrate Exhibit Illustrate Instruct Teach Train

Basic Knowledge
Basic Skills
Level

More Sophisticated Skills
Higher Level Abilities
Critical Understanding of Performance

Affective Domain

Learning Outcomes Related To Attitudes, Behaviors, and Values

Receiving	Responding	Valuing	Organizing	Characterizing
Students become aware of an attitude, behavior, or value.	Students exhibit a reaction or change as a result of exposure to an attitude, behavior, or value.	Students recognize value and display this through involvement or commitment.	Students determine a new value or behavior as important or a priority.	Students integrate consistent behavior as a naturalized value in spite of discomfort or cost. The value is recognized as a part of the person's character.
Accept Attend Describe Explain Locate Observe Realize Receive Recognize	Behave Comply Cooperate Discuss Examine Follow Model Present Respond Show Studies	Accept Adapt Balance Choose Differentiate Defend Influence Prefer Recognize Seek Value	Adapt Adjust Alter Change Customize Develop Improve Manipulate Modify Practice Revise	Authenticate Characterize Defend Display Embody Habituate Internalize Produce Represent Validate Verify

Basic Knowledge
Basic Skills
Level

More Sophisticated Skills
Higher Level Abilities
Critical Understanding of Performance

Appendix C:

Objective or SLO, a Practice Exercise

The statements below were written for programs and courses. Analyze the statements to determine whether they are objectives, or student learning outcomes. Write O for objectives and SLO for student learning outcome.

1.	(Public Speaking course) Critically listen to a publicly delivered speech and analyze the credibility of the content and the effectiveness of delivery.
2.	(Fundamental Mathematics) Apply the "Pythagorean theorem" to find any side of a right triangle given the other two sides.
3.	(Music) Successfully perform a selection of choral ensemble pieces in English and other languages in front of a classroom audience.
4.	(Biology) Provide non-biology majors with a solid ground of biological principles.
5.	(Philosophy of Religion) Read and comprehend primary works by (or secondary works about) the central figures in the history of the discipline.
6.	(Physical Education) Improve fitness levels, increase strength and flexibility, and lose body fat through participation in a variety of fitness activities.
7.	(Computer Studies) Cover assembly language programming: addressing; loops; arithmetic, subroutines, stack, recursion; macros; program design and testing; interfacing to high level language.
8.	(Spreadsheets) Create a professional looking spreadsheet using MS Excel spreadsheets which includes accurate functions, charting and is properly formatted adhering to good spreadsheet design.
9.	(Developmental Writing) Demonstrate critical reading, writing, and thinking skills through analysis, synthesis, and evaluation of important ideas from multiple points of view.
10.	(Engineering) Use the techniques, skills, and modern engineering tools necessary for engineering practice to solve a defined engineering problem.

Answers:
1. SLO
2. O
3. SLO
4. O
5. O
6. SLO
7. O
8. SLO
9. SLO
10. SLO

Appendix D:

Nine Principles of Good Practice for Assessing Student Learning

Authors: American Association for Higher Education (AAHE)

1. **The assessment of student learning begins with educational values.** Assessment is not an end in itself but a vehicle for educational improvement. Its effective practice, then, begins with and enacts a vision of the kinds of learning we most value for students and strive to help them achieve. Educational values should drive not only what we choose to assess but also how we do so. Where questions about educational mission and values are skipped over, assessment threatens to be an exercise in measuring what's easy, rather than a process of improving what we really care about.
2. **Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.** Learning is a complex process. It entails not only what students know but what they can do with what they know; it involves not only knowledge and abilities but values, attitudes, and habits of mind that affect both academic success and performance beyond the classroom. Assessment should reflect these understandings by employing a diverse array of methods, including those that call for actual performance, using them over time so as to reveal change, growth, and increasing degrees of integration. Such an approach aims for a more complete and accurate picture of learning, and therefore firmer bases for improving our students' educational experience.
3. **Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.** Assessment is a goal-oriented process. It entails comparing educational performance with educational purposes and expectations -- those derived from the institution's mission, from faculty intentions in program and course design, and from knowledge of students' own goals. Where program purposes lack specificity or agreement, assessment as a process pushes a campus toward clarity about where to aim and what standards to apply; assessment also prompts attention to where and how program goals will be taught and learned. Clear, shared, implementable goals are the cornerstone for assessment that is focused and useful.
4. **Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.** Information about outcomes is of high importance; where students "end up" matters greatly. But to improve outcomes, we need to know about student experience along the way -- about the curricula, teaching, and kind of student effort that lead to particular outcomes. Assessment can help us understand which students learn best under what conditions; with such knowledge comes the capacity to improve the whole of their learning.
5. **Assessment works best when it is ongoing not episodic.** Assessment is a process whose power is cumulative. Though isolated, "one-shot" assessment can be better than none, improvement is best fostered when assessment entails a linked series of activities undertaken over time. This may mean tracking the process of individual students, or of cohorts of students; it may mean collecting the same examples of student performance or using the same instrument semester after semester. The point is to monitor progress toward intended goals in a spirit of continuous improvement. Along the way, the assessment process itself should be evaluated and refined in light of emerging insights.
6. **Assessment fosters wider improvement when representatives from across the educational community are involved.** Student learning is a campus-wide responsibility, and assessment is a way of enacting that responsibility. Thus, while assessment efforts may start small, the aim over time is to involve people from across the educational community. Faculty play an especially important role, but assessment's questions can't be fully addressed without participation by student-affairs educators, librarians, administrators, and students. Assessment may also involve

individuals from beyond the campus (alumni/ae, trustees, employers) whose experience can enrich the sense of appropriate aims and standards for learning. Thus understood, assessment is not a task for small groups of experts but a collaborative activity; its aim is wider, better-informed attention to student learning by all parties with a stake in its improvement.

7. **Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.** Assessment recognizes the value of information in the process of improvement. But to be useful, information must be connected to issues or questions that people really care about. This implies assessment approaches that produce evidence that relevant parties will find credible, suggestive, and applicable to decisions that need to be made. It means thinking in advance about how the information will be used, and by whom. The point of assessment is not to gather data and return "results"; it is a process that starts with the questions of decision-makers, that involves them in the gathering and interpreting of data, and that informs and helps guide continuous improvement.
8. **Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.** Assessment alone changes little. Its greatest contribution comes on campuses where the quality of teaching and learning is visibly valued and worked at. On such campuses, the push to improve educational performance is a visible and primary goal of leadership; improving the quality of undergraduate education is central to the institution's planning, budgeting, and personnel decisions. On such campuses, information about learning outcomes is seen as an integral part of decision making, and avidly sought.
9. **Through assessment, educators meet responsibilities to students and to the public.** There is a compelling public stake in education. As educators, we have a responsibility to the publics that support or depend on us to provide information about the ways in which our students meet goals and expectations. But that responsibility goes beyond the reporting of such information; our deeper obligation -- to ourselves, our students, and society -- is to improve. Those to whom educators are accountable have a corresponding obligation to support such attempts at improvement.

Authors

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