Pathway to Proficiency: 
Institutional Framework for 
Student Learning Outcomes Plan 
2013-2020
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Introduction

Chaffey’s SLO story is one of profound, systemic, institutional change. As with any systemic institutional change, a central plan was necessary. The original version of the Pathways to Proficiency was created to provide a plan for the college to follow through a series of profound cultural and pedagogical changes. The plan has served the college well for the last five years. However, it is time for the next iteration of planning to guide Chaffey College into an environment of “sustainable, continuous quality improvement.”

Purpose

This second edition of Chaffey College’s Pathways to Proficiencies provides guidance for the college on its journey to excellence and sustainability. Specifically, the document serves several purposes. First, it provides a historical overview that outlines and reviews the fundamentals of the Chaffey College SLO process, a process which has been driven by faculty since 2004. Second, this document serves to encapsulate a vision of the future of the SLO process and student success as defined by Chaffey College. Most importantly, this document provides a roadmap to sustain this process for the next seven years. As such, this document identifies the responsibilities, content, deadlines, and philosophy of the Chaffey College SLO process until 2020.

Executive Summary

When Chaffey College first began the process of developing student learning outcomes (SLOs) in 2004, there was little awareness of student learning outcomes, no central plan for creating them, and no learning outcomes at the institutional level. The response to the SLO Initiative began slowly with the creation of SLOs for “model programs” by a small faculty committee that presented their progress to the college during fall 2005 FLEX. The response to the presentation was tepid at best. Faculty attitudes toward SLOs could best be described as suspicious and fearful. In 2008, however, the college made a firm commitment to the SLO process, offering 100% reassignment to any faculty member interested in facilitating the SLO process. Two SLO co-facilitators were hired (each at 50% reassignment) and an SLO Task Force was established. With Institutional Research taking the lead, an SLO assessment process based on the Nichols Model was adopted. Core Competencies were subsequently drafted by the SLO Task Force and reviewed by all college constituents, and campus-wide assessment of the competencies began. Dialogue regarding the relationship between course SLOs and course objectives became a primary focus.

By 2009 the college was actively engaged in profound institutional transformation. Institutional learning outcomes and a strategic plan, Pathways to Proficiency, 1st Edition, were established and approved through an extensive shared governance process. The SLO Task Force was reconfigured to become the SLO Committee, later renamed the Outcomes and Assessment Committee. A yearly “game-plan” was established with the SLO co-facilitators to make sustainability viable in the
SLO process. School SLO facilitators were created. The Dean of Instructional Support became responsible for overseeing SLO co-facilitators, and SLO leadership was supported by Vice-President of Instruction and the President/Superintendent.

This extensive level of support transformed the SLO process at Chaffey. Three to five student learning outcome statements were developed for all active courses and are included in all course syllabi. Intense curriculum review identified and deactivated inactive or obsolete courses. Program learning outcomes were established for all programs of study and student services and published in the college catalog. The Program and Service Review (PSR) process was revised with embedded SLOs. Curricunet became the vehicle for program review and the primary repository of SLO data. A chronological assessment plan (CAP) was established for all instructional programs to serve as a plan for ongoing, systematic assessments. Core Competencies were developed and evaluated. Rigorous, ongoing assessment of SLOs became institutionalized. A second edition of Pathways to Proficiency that documented these changes and laid a path for the future was completed and reviewed. The passivity and fear that characterized the early years of the SLO Initiative was replaced by widespread acceptance and a firm grasp of ACCJC rubrics on student learning outcomes. The current challenge of ongoing improvement and sustainability is the focus of this second edition.
Timeline Overview

Prior to 2004
- Little awareness of student learning outcomes.
- No strategic plan for student learning outcomes.
- No institutional learning outcomes.

2004 - 2005
- SLO process begun with creation of “model programs” by faculty committee.
- Program SLOs presented to college by SLO committee at fall FLEX.
- Small number of program SLOs developed in response to presentation.

2006-2007
- Limited number of program learning outcomes.
- No course learning outcomes.
- Little faculty leadership or committee oversight.
- Limited awareness of ACCJC Rubrics.
- Widespread suspicion and fear among faculty.

2008 - 2009
- Funds and resources committed to the SLO effort.
- Two SLO Co-facilitators to further the college’s SLO process recruited and trained.
- SLO Task Force established.
- Nichols Model for SLO process adopted.
- SLO assessment with Pre/Post Tests as primary assessment tool begun.
- Core Competencies drafted by the SLO Task Force and reviewed by Faculty Senate, Student Services, college deans and vice presidents, Associated Students of Chaffey College, Classified Senate, and Board of Trustees.
- Campus-wide assessment of Core Competencies begun.
- Dialogue regarding the relationship of course SLOs and course objectives a primary focus.

2009 – 2013
- Institutional learning outcomes and a strategic plan, *Pathways to Proficiency*, established and approved through this extensive shared governance process.
- SLO Task Force reconfigured to become the SLO Committee, later renamed the Outcomes and Assessment Committee.
- Yearly “game-plan” established with the SLO co-facilitators to facilitate sustainability in the SLO process.
- School SLO-facilitators created.
- Dean of Instructional Support becomes responsible for overseeing SLO co-facilitators.
- SLO leadership supported by college President/Superintendent.
- Widespread acceptance of college SLO initiative.
- Firm grasp of ACCJC rubrics on student learning outcomes by faculty.
- Program learning outcomes established for all programs of study and for student services.
- SLOs embedded in the program review process.
- Program review overhauled and reconfigured on Curricunet.
- Primary repository of SLO data housed on Curricunet, allowing for the creation of comprehensive assessment reports produced and updated on a regular basis.
- Curricunet SLO page created, which demonstrates the alignment of Core competencies, program learning outcomes and course SLOs.
- Curricunet SLO page created for course SLO assessment evidence, aligned with the Nichols Model.
- Chronological assessment plan for ongoing, systematic assessment of SLOs established for all instructional programs.
- 3-5 student learning outcome statements developed for all active courses.
- Intense curriculum review to identify and deactivate inactive or obsolete courses occurs.
- Program learning outcomes published in the college catalog.
- Course SLOs become mandatory in all college syllabi.
- Extensive college dialogue campus-wide regarding the use of assessment data.
- College produces first Report on Learning, outlining model programs of study based on SLO progress and identifying those programs in need of SLO remediation.
- College president initiates “Breakfast with the President” for faculty from programs needing SLO remediation.
- Decisions for faculty hiring are based, in part, on the status of SLO progress within instructional programs.
- Second version of *Pathways to Proficiency* completed and reviewed.

**2014 - 2020**

- Second version of *Pathways to Proficiency* guides college.
- Completion of chronological assessment plans and Core Competency Matrix by non-instructional programs
- Evaluate existing Core Competencies
- Continue to investigate software solutions for SLO data storage.
- Continue to embed the SLO process within the college’s planning, budgeting and institutional effectiveness processes.
- Continue to evaluate and fine-tune of organizational structures, such as program review, to support student learning.
INSTITUTIONAL FRAMEWORK

The Pathways to Proficiency SLO Plan

The nature of any college’s SLO process is vast. A successful SLO process requires several components: an institutional framework that can speak to other key college processes such as program review; planning and budgeting; institutional buy-in, from the college president through the student body; a common-sense model for the process of SLO measurement, such as the Nichols Model; a common-sense method for storing and organizing SLO data and other evidence; a shared vocabulary and process for all to follow and promote; and a college-wide commitment to revise, follow-up on, and renew the SLOs as well as the overall strategic plan.

The guiding principles for the first version of Pathways to Proficiency continue to serve this next edition as well. Several assumptions underlie these principles:

- Outcomes assessment for instructional programs and student services is a faculty-driven process.
- Collegial communication and reflective dialogue are the most important components of the SLO process at Chaffey College.
- Gathering data is a necessary component of the SLO process; however, the key ingredient is the “reflective dialogue” among colleagues in discussing program success and institutional effectiveness.
- Outcomes assessment should be as logical and as simple as possible without becoming “busy work.”
- Assessment plans and the use of results should be managed by the programs that have created the assessment and collected the data.
- The goal of outcomes-based assessment is not punitive. On the contrary, SLO assessment is a tool to support programs in their efforts to fulfill the college mission and maintain the current student-centered learning environment.

In addition, the following features of the “Sustainable Continuous Quality Improvement” category of the Accrediting Commission for Community and Junior Colleges (ACCJC) are folded into this next generation of the Pathways to Proficiency:

- Student learning outcomes and assessment are ongoing, systematic, and used for continuous quality improvement.
- Dialogue about student learning is ongoing, pervasive, and robust.
- Evaluation and fine-tuning of organizational structures to support student learning is ongoing.
- Student learning improvement is a visible priority in all practices and structures across the college.
- Learning outcomes are specifically linked to program reviews.
The original philosophy underlying the first version of Pathways to Proficiency contained three components which are still relevant to the college and the student learning process today. These three components include:

- The Pathway to Proficiency Plan is a collaborative effort that involves all facets of the Chaffey College family, including administrators, faculty, staff and students. This collaborative effort ensures that the college strives for the highest level of institutional effectiveness and that none of the stakeholders of the college’s student-centered learning environment are excluded from the assessment process.

- The Pathway to Proficiency Plan is a living document that is open to discussion, critique, and amendment. It will continually be reevaluated for effectiveness and modified if necessary.

- The Pathway to Proficiency Plan is not the end-all and be-all of the college or of a program’s ability to support student learning. At no time will this document usurp faculty primacy, academic freedom, program expertise, or federal and state mandates and regulations.

**Outcomes and Assessment Committee**

The Outcomes and Assessment Committee (OAC) is comprised of faculty, classified staff and administrators. The primary responsibility of this committee is the implementation of the *Pathways to Proficiency* Plan. Other responsibilities include the following:

- Provide vision and leadership for outcomes-based assessment
- Ensure that Chaffey College is in compliance with ACCJC guidelines for student learning outcomes sustainability
- Provide administrators, faculty and classified staff with regular updates and information about the field of outcomes-based assessment, and its status at Chaffey College
- Develop policies and procedures for outcomes-based assessment development, implementation, evaluation and sustainability
- Develop comprehensive training materials and professional development opportunities on outcomes-based assessment for administrators, faculty and classified staff
- Provide administrators, faculty and classified staff with assistance, resources, and support to sustain outcomes-based assessment.
- Provide substantive feedback regarding individual program SLOs as part of the college’s program review process (PSR).
- Provide training and training materials to PSR writers regarding the completion of their program SLO page in program review.
CAMPUS-WIDE ENGAGEMENT
Faculty and Student Learning Outcomes

In accordance with the shared governance model within the California Community College system, the requirements of accreditation standards as set forth by ACCJC, and simple common sense, the SLO process at Chaffey College was developed by faculty for faculty, staff, and administrators. An SLO process that is dictated from the top does not gain traction.

Chaffey’s SLO process began in 2004 as a grassroots effort by faculty who created SLOs for “model programs.” Faculty created the SLOs and made a presentation to the college regarding their efforts during fall 2005 FLEX. The plan was for these programs to create a spark, to model best practices, and to inform other college programs. While this approach lacked sufficient support and funding to sustain itself, it did introduce faculty, staff and administrators to SLOs, as well as establish an SLO presence on campus through the creation of the SLO Task Force, which operated under the Faculty Senate.

A significant turning point occurred in 2008 when college committed funds and resources to the SLO effort. Two faculty SLO co-facilitators were recruited to further the college’s SLO process. These co-facilitators immediately set out for SLO training from WASC, from the Academic Senate for California Community Colleges, and from the Research and Planning Group for California Community Colleges. That spring it was determined that the college needed additional manpower and resources to meet the 2012 deadline for proficiency established by ACCJC. Therefore “school SLO-facilitators” were created. These school facilitators worked with the college’s SLO co-facilitators. They received training by WASC regarding student learning outcomes, and they become the point people within their schools for faculty. The school SLO facilitators proved to be very effective in providing momentum for the SLO process. Unfortunately, not all schools were able to find faculty to fill this position. The schools without an SLO facilitator have progressed far more slowly than those with facilitators.

During this same period, the college’s original SLO Task Force was reconfigured to become the SLO Committee, which eventually began the Outcomes and Assessment Committee in 2010. The OAC subsequently drafted the college’s Core Competencies. The committee presently comprises 25 full and part-time faculty, staff, deans, and institutional researchers. It is charged with overseeing the college general SLO process and SLO strategic plan and with reviewing the SLO page in the annual Program and Review process, described below. The OAC also manages the assessment of Core Competencies during each spring semester, including creating or locating particular assessment tools and establishing a time table for each Core Competency assessment.

The evolution of attitudes towards SLOs has been gradual. All participants have had to exercise considerable patience. Fear and anxiety lingered for a long time. Rumor and innuendo from other community colleges regarding ACCJC’s “intentions” fed the anxiety. However, having an actual strategic plan lent substance to the process and helped allay fear. Further, specific language in the faculty contract reflected administration’s desire to have the SLO process be one of discovery and improvement on campus, rather than one of intimidation and reprimand. People had to learn how to “reflectively dialogue” with each other in some cases. The SLO newsletter, the SLO Down, with its somewhat irreverent and humorous approach to disseminating SLO information, proved to be very popular not
only on the local campus, but statewide. Resistance to the SLO process, while not entirely eliminated, has been gradually reduced as faculty have become informed about the benefits of the SLO process. “Enthusiasm” and “fun” are words actually used by some faculty to describe the college’s current SLO process, something that would have been unthinkable nine years ago.

**Administrators and Student Learning Outcomes**

Governance roles at Chaffey College facilitate decisions that support student learning programs and services which ultimately contribute to the improvement of institutional effectiveness. Chaffey College realizes that ethical and effective leadership throughout the organization enable the college to identify institutional learning outcomes, values, as well as to set and achieve goals. The college president/superintendent’s SLO “pep talks” during convocation set the SLO process front and center at the beginning of each semester. There can be no doubt as to the ramifications of a breakfast meeting with the college’s president/superintendent to explain slow progress with SLOs, an approach that was adopted for fall 2012. The president/superintendent’s oversight and interest in the SLO process establishes a climate of interest, curiosity and motivation for faculty. Likewise, the Associate Superintendent, who serves as the Chief Instructional Officer and the Accreditation Liaison Officer is similarly involved with the SLO process and provides the support to back-up established deadlines, SLO procedures and reports. The Dean of Instructional Support oversees the college’s SLO Co-facilitators and provides a vital liaison service between the SLO process and the college’s deans. The dean maps out a yearly game-plan with the SLO Co-Facilitators, all towards achieving sustainability in the SLO process by 2012 and beyond. The college’s deans also provide support with individual programs and faculty to assure deadlines are met. This high level of administrative support is essential to the continued success of the college’s SLO process.

**Classified Staff and Student Learning Outcomes**

It would be impossible for the college to pull off its SLO process without the support of its classified staff. Classified staff, from both student support services, instructional programs, and administrative services, assist in the SLO process. Classified staff also serves on the Outcomes and Assessment Committee, as well as on the Curriculum Committee, both of which play a major role in the SLO process at Chaffey College. Classified staff also plays a major role in Professional Development activities, such as fall and spring FLEX, at which time SLO activities and training are offered to the campus community at large.

**Students and Student Learning Outcomes**

The most common reply heard from students when explaining the student learning outcomes process just prior to an SLO assessment is “I didn’t realize you cared.” Student success has become an overused and abused cliché. However, for the student, this phrase is wrapped up in individual hopes, fears, and anxiety. While course learning outcomes are included on course syllabi, the college could do
more to fold students into the robust SLO dialogue campus-wide. This is one of several areas for examination as the SLO process moves forward at Chaffey College.

**Institutional Research and SLOs/AUOs**

Institutional Research (IR) played a very important role in the early years of the Chaffey College SLO process, and continues to assist this process. Armed with the tools of quantitative and qualitative educational research, the IR department established the Nichols Model as the SLO process of choice, as well as helped establish a common vocabulary for the SLO process throughout campus. IR helped programs of study craft learning outcome statements and develop assessment pre/post tests. The IR department’s *Did You Know* briefs proved to be very popular with the campus community in terms of the brief and understandable approach to assessment validation, analysis and recommendations for future planning. An example of a *Did You Know* brief is attached as Appendix B.

As the Chaffey SLO process has evolved over these past five years, and as the instructional side of the college has become more confident of their SLO responsibilities, IR’s role in SLOs/AUO has been reserved for assisting in student services assessment and housing their SLO evidence. IR continues to maintain a portion of their college website devoted to SLO evidence at [http://www.chaffey.edu/research/slo_resources.htm](http://www.chaffey.edu/research/slo_resources.htm).
ALIGNMENT BETWEEN INSTITUTIONAL & COURSE LEARNING OUTCOMES

Institutional Learning Outcomes – Core Competencies

Chaffey College institutional learning outcomes are referred to as the college’s Core Competencies. Course, program, and student service SLOs all ultimately connect to the Core Competencies. These Core Competencies also serve the college as the General Education Learning Outcomes. Core Competencies reflect the content common to program and student services SLOs. The alignment from course SLOs through program SLOs and student services SLOs, upward to the institutional SLOs or Core Competencies, grounds the entire Chaffey College SLO process.

The following is the list of Chaffey College Core competencies:

Chaffey College strives to develop lifelong learners who exhibit the following:

Communication
Students will demonstrate effective communication and comprehension skills. Examples will include, but are not limited to the following:
- Comprehend, analyze, and respond appropriately to oral, written, and visual information.
- Effectively communicate/express information through speaking, writing, visual, and other appropriate modes of communication/expression.

Critical Thinking and Information Competency
Students will demonstrate critical thinking skills in problem solving across the disciplines and in daily life. Examples will include, but are not limited to the following:
- Identify vital questions, problems, or issues and evaluate the plausibility of a solution.
- Analyze, compose, and assess the validity of an argument.
- Compute and analyze multiple representations of quantitative information, including graphical, formulaic, numerical, verbal, and visual.
- Compare, contrast and analyze scientific CONCEPTS and scientific observation.
- Select, analyze and evaluate the accuracy, credibility, relevance and reasonableness of information and its sources.

Community/Global Awareness and Responsibility
Students will demonstrate knowledge of significant social, cultural, environmental and aesthetic perspectives. Examples will include, but are not limited to the following:
- Identify the social and ethical responsibilities of the individual in society.
- Demonstrate commitment to active citizenship by recognizing and evaluating important social, ecological, economical, and political issues.
- Demonstrate an understanding and appreciation for individual, social, and cultural diversity.

Personal, Academic, and Career Development
Students will assess their own knowledge, skills and abilities; set personal, educational, and career goals; work independently and in group settings; demonstrate computer literacy and cultivate self reliance, financial literacy and physical, mental and social health. Examples will include, but are not limited to the following:
- Demonstrate professional and ethical responsibilities of the individual.
- Identify personal, academic, psychological, and social needs, determine resources and access appropriate services.
- Develop, implement, and evaluate progress towards achieving personal goals, academic goals, career goals, and career resilience.

These Core Competencies were originally drafted in the spring, 2008 by the original SLO Task Force. These competencies were reviewed by the Faculty Senate, Student Services, college deans and vice presidents, the Associated Students of Chaffey College, Classified Senate, and Board of Trustees.

The Core Competencies are evaluated every five years and revised as necessary. For instance, when the college’s curriculum committee decided to streamline local graduation requirements in 2011,
the local graduation requirement for computer competency was folded into the Core Competency requiring “Personal, Academic and Career Development.” Thus, the college was able to streamline local graduation requirements but yet hold on to the concept of computer competency as a piece of a Core Competency.

Specific Core Competencies are assessed campus-wide each spring. Beginning in spring 2014, Institutional Research will randomly select faculty to participate in the assessment. The faculty will distribute the assessment tool to their students and return the tool to Institutional Research for tabulating over the summer. Fall Flex will then include a session on these results. This Flex session will be followed up by a workshop in the Faculty Success Center during the fall semester on the results of the assessment and input from this session will be turned over to the Outcomes and Assessment Committee.

The Outcomes and Assessment Committee reviews Core Competency results, and determines what to do next. As an example, after assessing critical thinking in 2009, it was decided that all Course Outlines of Record should include, as a part of the “out of class assignment” section, to include an example of a critical thinking assignment which could occur in that course – an attempt at a granular and gradual increase in course rigor.

The Core Competencies are reviewed as part of the college dialogue establishing statements and philosophies of importance to the college culture, including the college’s Core Values (Appendix and the Faculty Values PRIDE statement, and the College’s Ethics Statement.)
Program Learning Outcomes

Program Learning Outcomes, both instructional and non-instructional, speak to what the student is expected to demonstrate as a result of successfully completing a series of courses related by content, or after interacting with that student service. Instructional Program Learning Outcomes serve to link the course learning outcomes to the institutional learning outcomes (Core Competencies). Program learning outcomes measure the knowledge, skills and abilities a student should demonstrate upon successful completion of the coursework within that program of study, or interaction with the particular student service. As such the college does not routinely engage in SLO assessment at the college level. For instructional program SLO data collected at the course level is extrapolated upwards through the program SLOs and finally to the Core Competencies. For non-instructional programs, the program SLO is directly related to the Core Competency.

Developing instructional program SLOs allows faculty to see how courses within their program of study fit together. A curriculum map, which indicates if a course “introduces,” “practices” or “masters” the program SLO provide evidence course to course alignment, and course to program SLO alignment. See appendix xx for an example of a curriculum map. The Core Competency Matrix, in addition to the curriculum maps, provide evidence of the alignment between program SLOs and the Core Competencies. See appendix xx for an example of the Core Competency Matrix. Blank templates of these two documents can be found on the college’s SLO website at www.chaffey.edu/slo.

By way of announcing program student learning outcomes to students and the public at large, as of fall 2012, program learning outcomes are published in the college catalog.
Program SLOs

Program vision, mission, and goals

Student needs and goals

Related professional expectations

Community expectations

Parent institution mission vision and goals

Transfer Requirements

Overlapping Course SLOs Become Program SLOs

Course SLOs

Course SLOs

Course SLOs

Course SLOs

Diagram courtesy of Janet Fulks, Bakersfield College
Course  Student Learning Outcomes (SLOs)

Course SLOs represent the “heart and soul” of the SLO process at Chaffey College. As with program SLOs, course SLOs speak to the knowledge, skills and abilities a student should demonstrate upon successful completion of that course.

SLO assessment primarily occurs at the course level. Faculty is responsible for creating 3-5 student learning outcome statement per active course. The preferred format for a course SLO includes the condition which is desired, the audience that condition is desired of, the behavior that condition will signal, and the degree to which the behavior is required to be considered “successful.”

Since 2008, there has been considerable dialogue, both within the Chaffey community as well as through the community college system wide, regarding the relationship of course SLOs and course objectives. It is Chaffey College’s opinion that course SLOs and course objectives are separate outcomes. The course objectives, as listed in the course outline of record, speak to what the instructor will put into the course (input) to achieve a desired learning outcome from the student (output). ACCJC verified this philosophy in its March 2009 newsletter in the article, Where Do Course SLOs Live? by Commissioner John Nixon.
SLO data for courses offered via distance education, be it totally online, hybrid, or courses offered at the Chino Institute for Women, are housed in the same curriculum area on Curricunet, however, separate data boxes have been provided for DE courses. This facilitates the aggregating of data in order to compare SLO for face to face courses and distance education courses.

In compliance with the ACCJC requirement, and in following best practice for communicating with students, course SLOs have been required in all college syllabi since Fall 2012. This requirement has been facilitated by several areas including administrative assistants who daily interface with full and part-time faculty.

**Course SLO to Core Competency Alignment**

The alignment from course SLOs through program SLOs and student services SLOs, upward to the institutional SLOs or Core Competencies grounds the entire Chaffey College SLO process. Learning in the classroom, as well as student learning as a result of interacting with a student service, ultimately relates to communication, critical thinking and information competency, community/global awareness and responsibility, and personal, academic and career development. The arrangement on the SLO course checklist page in Curricunet demonstrates this alignment. Please refer to the section on Curricunet and SLOs in this document for more information.

**Student Services Learning Outcomes**

Instructional programs are not the only programs to engage in the SLO process at Chaffey College. Student services, including the Library, the Honors Program, Success Centers, Supplemental Instruction, AMAN/AWOMAN, Admissions and Records, Articulation, the Career Center, Cooperative Education, Counseling, Disability Programs and Services, Early Advantage, Early Assessment Program, EOPS/CARE, Guidance, Matriculation, Opening Doors to Excellence, Puente, and the Veteran’s Center, follow the same approach to SLO assessment – students are assessed at the most granular level at which they encounter the student service. Beginning in 2014, non-instructional programs including Student Services, will be required to complete a chronological assessment plan and the Core competency Matrix, both of which are described in detail later in this report. Housing data, however, occurs in several various locations, ranging from the “low-tech” ubiquitous three-ring binder (a format which the entire college utilized until 2010), to Curricunet’s Program Review module. Additionally, Institutional Research has housed SLO assessment and analysis on their website (www.chaffey.edu/IR). Plans for the future call for a more consistent approach to storage of Student Services data.

The Honors Program SLO process is a good example of the kinds of assessment occurring in the Student Services area and the challenges in storing the data in a manner that is both consistent and widely available. The Honors Program assesses its students in three different ways. Students who complete the program take an exit survey, which includes questions about students’ attitudes toward
the program as well as questions designed to measure how much students have learned about content emphasized by the Honors Program, such as academic research. The Honors Program itself houses the data from the survey, and the Honors Program Committee reviews the findings of the survey each year to determine what changes in policies or procedures are necessary. The committee’s findings are then made available college wide; currently, this is done by posting the findings to Moodle. Additionally, the Honors Program also has its graduates write a short piece about what they gained from their Honors experience. These pieces are published each year and distributed as part of the program’s graduation ceremony, and copies of the booklet are given to college administrators, including the governing board, and copies of the booklet are given to committee members and kept on file with the Honors Program Office. The Honors Program Committee reviews this booklet as part of its yearly assessment to determine whether or not the program’s students are meeting the Honors Program SLOs. The final way that SLOs are measured in the Honors Program is by an annual review of the number of students who participate in college and state-wide conferences. The Honors Program Office keeps a record of these numbers on file, and the committee reviews these numbers annually. A decrease in participation by 10% or more from year to year triggers action on the part of the committee. For example, this year, the Honors Program will be hosting a workshop on abstract writing through the college’s Language Success Center to help address the decrease in conference participation observed last year. The results of the Honors Program SLO assessment, including survey data, electronic copies of the graduation booklet, and the committee’s annual comprehensive SLO report are available through the Honors Program and could be easily made more easily available college-wide were there an established and consistent method for posting and sharing SLO results in the Student Services area.
COMPREHENSIVE ASSESSMENT REPORTS

Chronological Assessment Plans (Appendix F)

The concept of a chronological assessment plan (CAP) was created for two purposes: to guide faculty, semester-to-semester, in the cycle of course SLO assessment, and to provide evidence of ongoing systematic SLO assessment which is used for continuous quality improvement. These CAPs are simple Excel spreadsheets which list the 3-5 course SLOs for all active courses, and organized by semester. The CAP provides a snapshot of course SLO assessment activity by semester, within specific programs or student services. CAPs provide a brief description of the type of SLO assessment, i.e., “pre/post tests” or “embedded exams.” CAPs DO NOT include actual assessment data. Most CAPs are planned out at least 6 years in advance, and are subject to adjustment at the beginning of the fall and spring semesters during FLEX. CAPs can be analyzed to reflect course reductions, although that is not the main purpose of these documents.

CAPs are used for both instructional and non-instructional programs as of 2014.

Core Competency Matrix (Appendix G)

The Core Competency Matrix is a piece of SLO evidence created by both instructional and non-instructional programs to link program SLOs to Core Competencies. The Core Competency matrix identifies gaps within a program of study or a non-instructional program in terms of the broader institutional learning outcomes. College staff and administrators are requested to review their Core competency Matrix at least once a year. Non-instructional Core Competency Matrices are housed in one of several locations as outlined previously – either the program’s three-ring binder, or in Program and Services Review in Curricunet. Faculty is instructed to review their Core Competency Matrix during each Flex session prior to the start of each semester. Instructional Core Competency Matrices are housed on the curriculum side of Curricunet in the program checklist.

Curriculum Maps (Appendix H)

The curriculum map is a piece of SLO evidence created by instructional programs, and serves to link active courses to program SLOs. The maps also identify which courses, within a program of study, “introduce,” “practice” or “master” concepts related to the program SLOs. Curriculum maps help identify gaps in a program’s curricular content and assist with curriculum modification/alignment. Faculty are requested to review their curriculum maps during each Flex session prior to the start of each semester. Curriculum maps are housed on the program checklist page in Curricunet. In addition, curriculum maps are used as evidence for the Programs’ and Services Review process.
Curricunet Reports

The Outcomes and Assessment Committee has worked with staff from Curricunet, the college’s curriculum database management system, to create a series of reports regarding course SLO progress. Because the primary instructional SLO assessment occurs in the classroom at the course level, it seemed logical to attach course SLO evidence with the course outlines of record in Curricunet. The details of this SLO evidence are described later in this document under Chaffey’s SLO Tools. The reports which can now be generated on a regular basis in Curricunet include the following:

- Courses with SLOs
- Summary of Evidence Report
- Upcoming SLO Assessment Report
- Course Closing the Loop Report (Appendix A)

These reports correspond to the 5 boxes of the Nichols Model which is discussed later in this document under Chaffey’s SLO Tools. As the college has progressed through the various stages of SLO implementation, some of these reports proved more useful than others. For instance, in the beginning of the SLO implementation in 2008, the report of note was the Courses with SLOs report. At the present time, however, all courses have SLOs and this report is not as important as the Courses Closing the Loop report. The Upcoming SLO Assessment Report is rather new to the college, and is derived from a new feature added to the course SLO page in Curricunet. Not all courses have filled in this particular box, and this report will not reflect assessment activity until faculty, through SLO updating, fill in this new feature. Until that time, the chronological assessment plans (described above) serve to indicate current SLO assessment activity.
CHAFFEY’S SLO TOOLS

The Nichols Model

The Nichols Model has been described as a five column model – a “roadmap” of assessment activities which fit within the concept of institutional effectiveness. Chaffey College adopted this model in 2004 for the SLO process, and this model continues to prove relevant. Chaffey College’s interpretation of the Nichols Model for the SLO process consists of the following:

- **Creating the SLO statement** – see course SLO section above. The course SLO should speak to the knowledge, skills and abilities a student masters upon successful completion of that course. The following is the preferred format for a course SLO: Upon the successful completion of BIOLOGY 1 (grade of B or higher), students will distinguish questions that can be addressed scientifically from those that cannot, and identify basic components of the scientific method as it pertains to biological systems ranging from molecules to the biosphere.

- **Establishing a means of assessment suitable to the SLO and to the course content**
  - Pre/post tests
  - Embedded assessments
  - Word clouds
  - **Pre/Post Tests** - Between 2008 – 2010, the preferred method of SLO assessment was the pre/post test. At that time, this form of assessment seemed to be the most logical to measure what students learned as a result of taking a course. Pre/post tests, however, proved to be time consuming. Faculty would create the pre/post test and administer, usually employing a . The tests were usually turned over to Institutional Research for tabulating and analysis. This created a bottleneck for Institutional Research. While some pre/post testing is still employed, the preferred SLO assessment methods has become the embedded assessment.
  - **Embedded Assessments** - As faculty became more comfortable with SLOs, and as training evolved for the SLO faculty, embedded assessments became the preferred SLO assessment. An embedded occurs within the regular class or curricular activity. Specific questions can be embedded on exams in sections within course offerings, department, programs of study or the core competencies. “Embedded assessment can provide formative information for pedagogical improvement and student learning needs.” (ASCCC SLO Terminology Glossary, n.d.).
  - **Word Clouds** – For those faculty looking for a more visual approach to SLO assessment, word clouds have proven interesting and engaging. Words clouds are a visual representations of text. The greater the word appears in the text, the larger the word appears in the cloud. There are several word cloud applications available on the web – the one used at Chaffey is Wordle ([www.wordle.net](http://www.wordle.net)). Used in a “pre” and “post” assessment setting, word clouds can provide meaning to the visual learner and provide lots of points for reflection on learning between the faculty and student. For example, word clouds are being used this semester in a Survey of Dance course. The first day of class, students write down 25 terms they thought they would encounter in the class throughout the semester. Students were told to repeat terms if they couldn’t think of 25 individual terms. Staff then created the word clouds on Wordle. The
following three categories were used for scoring: 25 individual terms; correct spelling; appropriate terms in a “survey” course.

- **Establishing a benchmark or criteria for success**
  Initially, benchmarks were set very low out of a worry that establishing higher benchmarks and not achieving them would somehow prove detrimental. As faculty are becoming more comfortable with the SLO process, and general acceptance is increasing, there seems to be a general movement towards establishing more robust criteria and benchmarks as faculty become more comfortable and confident with the SLO process. Routinely, benchmarks have risen from the safety of a grade of 60 or 70, to the challenge of a grade of 80 or 85.

- **Collecting the data**
  During the era of SLO pre/post tests, Institutional Research played a very heavy role in the collection and analysis of SLO course data. However, this proved a bit unwieldy. Demand overwhelmed the capacity of the Institutional Research department. Analysis of SLO data, in some cases, removed faculty from ownership and reflective dialogue of the assessment results. As a result, the SLO process has slowed evolved to the use of embedded assessments. For the “pre/post test era,” Institutional Research has housed results on their website at [http://www.chaffey.edu/research/slo_resources.htm](http://www.chaffey.edu/research/slo_resources.htm).

- **Reflectively dialoging and “closing the loop.”**
  The tangible and intangible results of the SLO process at Chaffey College have been most interesting. There is actual SLO assessment data and evidence to ponder and discuss among colleagues in the quest for improvement, efficiency, and student success. However, it is the intangible that continues to surprise. Faculty members are talking to each other more. Participation in issues regarding professional development sometimes arise out of these discussions. Fractured relationships sometimes progress towards increased collegiality and better communication. Consequently, faculty are more informed on issues regarding their curriculum, program review and SLOs. Loops pertaining to overall institutional effectiveness can be found in these granular SLO activities at the course level.

So what, exactly, constitutes “closing a loop?” The following list represents suggestions to “close the loop.” This list is available under the help question mark under Box 13 on the course SLO page in Curricunet. This partial list includes the following:

- Modify your syllabus to spend more or less time covering a particular concept/topic
- Modify the Course Outline of Record for the course
- Modify the Course Outline of Record for the entire program of study
- Establish Pre-requisites or co-requisites
- Eliminate pre-requisites or co-requisites
- Add new material/topics/content
- Engage in professional reading in your field to check trends
- Engage in other professional development activities related to your teaching style
- Employ new technologies in your classroom
- Re-write your course SLOs
- Re-write your program SLOs
- Re-considered the effectiveness of your assessment tool
- Change your assessment tool
- Seek student input into the SLO process
- Modify your program review
- Request additional faculty or staff
- Request technology
- Spend more time thinking and discussing “student success” with your colleagues
- Review results and decided to assess in the same manner again
- Employ elements of Hope Theory
- other

While this list of “Closing the Loop” possibilities is not prescriptive by any means, it does provide faculty with a sense of how to close a loop. Items on the list often include projects or initiatives which have come out of Professional Development through the Faculty Success Center. A Curricunet report, entitled “Closing the Loop” represent raw data exhibiting faculty’s activities in closing SLO loops. Appendix xx

Diagram courtesy of Alabama State University, 2009.
Curricunet and SLOs

The Curricunet database management system serves the college for the storage and organization of most SLO data. The Outcomes and Assessment Committee reviewed various SLO software packages in the spring 2011. The OAC recommended to the Vice President of Instruction and Student Services to work with Curricunet for requested changes which would house the growing body of SLO data in spring 2011. This request was based on several reasons. Primarily, the OAC was committed to keeping the SLO process manageable and based in common-sense. Secondarily, there was a sensitivity to budgetary constraints.
Figure xx shows the Curricunet Learning Outcomes Page within the course checklist on Curricunet. This illustration demonstrates the alignment between Core Competency (Critical Thinking), program SLO (Distinguish question that can be addressed scientifically from those that cannot, and identify basic components of the scientific method), and the course SLO (Distinguish questions that can be addressed scientifically from those that cannot, and identify basic components of the scientific method as it pertains to human heredity).
1. Course SLO
   Please do not erase old SLOs - edit new SLOs and date your entries!
   1. Distinguish questions that can be addressed scientifically from those that cannot, and identify basic components of the scientific method as it pertains to human heredity.

2. Means of Assessment
   Multiple Choice Exam

3. Assessment Date
   Semester: Spring Year: 2012

4. Criteria for Success
   Spring 2012: 97% of the students present on the day of the assessment will answer the relevant questions (# 1, 2, 4, 8-9) correctly.

5. Summary of Evidence
   Please Date Your Entries!
   Spring 2012: Students demonstrated a proficient understanding of the scientific method [for each question, 93% students answered correctly].

6. Total Number of Sections of this course this semester (if you do not have it yet, just enter zero)

7. Number of sections of this course which were assessed for the course SLO this semester (if you do not have it yet, just enter zero)

8. Percentage of students enrolled in this course who were assessed for this course SLO this semester (if you do not have it yet, just enter zero)

9. Percentage of full-time faculty who participated in this course assessment (if you do not have it yet, just enter zero)

10. Summary of Evidence Attachments
   Please Date Your Entries!
   Title
   File
Figure xx shows the Curricunet Learning Outcomes Page within the course checklist on Curricunet. This illustration demonstrates the boxes which align with the five column Nichols Model.

The course SLO page on Curricunet is a work in progress. As faculty request more sophisticated approaches to the storage and organization of SLO evidence, and as the Curricunet product continues to evolve, new opportunities and challenges will present themselves as the college strives to maintain a SLO environment of sustainable, continuous quality improvement. Changes to the Curricunet SLO page are also driven by reporting needs to ACCJC for both the annual report and various SLO reports. The philosophy is to manipulate local tools strategically and with common sense, rather than to throw new software (amid tight funding) at the SLO needs.
Program Review and SLOs

Program SLOs are embedded in the program review process. The college’s program review process underwent a major overhaul in 2009-2010 to focus on the overall well-being and “health” of programs and services. At that time, a three year calendar for program review was established for the approximately 120 programs, including 67 instructional programs and 26 student services. Deans’ Offices and administrative areas round out the remainder of the total program review count.

Since the overhaul in program review philosophy and design, the Outcomes and Assessment Committee (OAC) took on a key role in the program review process. The OAC worked with program review staff from both Chaffey College and Curricunet to design an SLO page which included relevant questions regarding the status of a program’s SLOs and this continues to be a work in progress. Working in teams of two, the OAC readers review the SLO page in program review. Specific items checked by the OAC readers include the construction and appropriateness of the program SLO statements, the appropriateness of the form of course assessment, the appropriateness of the course benchmark or criteria for success, the correct attachment of course SLO assessment data to the curriculum SLO page, and the appropriateness of the faculty response in closing the various course SLO loops. The OAC readers also check for current attachment of supporting SLO evidence: The chronological assessment plans (CAPs), curriculum maps and the Core Competency Matrix. Finally the OAC readers review the CAPs to guarantee the programs are staying on track with their SLO assessment schedule.

A rubric (Appendix J) is used by the OAC readers to provide consistent feedback to the program review writers. This rubric has been reviewed by the OAC as well as the Faculty Senate. In addition to the rubric, the OAC created a list of appropriate responses to each area of the rubric. Again, this is to assure consistent and substantial feedback to the program review writer. The program review writers are given an opportunity to meet with the OAC to review feedback and make corrections. The inclusion of the SLO page in program review has proven to be a very good learning experience for faculty new to the Chaffey College SLO process. This opportunity allows for all college programs and services to stay, somewhat, in step with their SLO process. If a program or service begins to lag behind, the program review process provides the OAC with a chance to offer remediation. Copies of the rubric and feedback letters are found in the appendix to this document.

The ultimate goal of including SLO information within the program review process is to provide evidence with which to make informed decisions about institutional planning and budgeting. The OAC continues to create that relevant link between the college’s SLO process and student success.

The approximate schedule for programs participating in the colleges PSR cycle includes the following:
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<td>• Accounting Services</td>
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<td>• Automotive Technology</td>
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<td>• Alumni Affairs</td>
<td>• Counseling</td>
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<td>• Anthropology</td>
<td>• ASL</td>
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<td>• Art</td>
<td>• Financial Aid</td>
<td>• Budgeting Services</td>
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<td>• Superintendent/President</td>
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<td>• Math Success Center</td>
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<td>• Athletics</td>
<td>• Classified Senate</td>
<td>• Earth Science/Geology</td>
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<td>• PE</td>
<td>• Wignall Museum</td>
<td>• CIW</td>
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<td>• Child Development Center</td>
<td>• Communication Studies</td>
<td>• Distance Education</td>
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<td>• Dean, Social &amp; Behavioral Sciences</td>
<td>• Chemistry</td>
<td>• Pharmacy Technician</td>
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<td>• Chinese</td>
<td>• VP Instruction and Student Services</td>
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<td>• Cinema</td>
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<td>• Fontana Success Center</td>
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<td>• Economics</td>
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<td>• Student Activities</td>
<td>• Fashion Design</td>
<td>• Business</td>
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<td>• Chino Campus</td>
<td>• Dean, Math &amp; Science</td>
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<td>• VP Admin Services &amp; External Relations</td>
<td>• Campus Police</td>
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<td>• Facilities/Services</td>
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<td>• Dean, Visual &amp; Performing Arts</td>
<td>• Chino Success Center</td>
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<td>• Rancho Reading/Writing Center</td>
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<td>• Dean, PE &amp; Athletics</td>
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<td>• Dental</td>
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<td>• Theatre</td>
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<td>• Human Resources</td>
<td>• VP, Business Services</td>
<td>• Faculty Senate/Curriculum</td>
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<td>• Humanities</td>
<td>• Global Career Center</td>
<td>• Psychology</td>
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<td>• Institutional Research</td>
<td>• Articulation/Transfer/Tech Prep</td>
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<td>• Journalism</td>
<td>• Biology</td>
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<td>• M&amp;O/Grounds</td>
<td>• CNA</td>
<td>• Purchasing</td>
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<td>• Social Science</td>
<td>• Correctional Science</td>
<td>• Music</td>
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<td>• Math</td>
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<td>• CISCO</td>
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<td>• Multidisciplinary Center</td>
<td>• Engineering</td>
<td>• Information Tech Services</td>
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<td>• Engineering Tech</td>
<td>• AMT</td>
<td>• Nutrition &amp; Food</td>
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SLOS AND ONGOING IMPROVEMENT

SLOs and Institutional Effectiveness

Much has been spoken and written regarding institutional effectiveness both locally at Chaffey College and statewide throughout the California Community College System. One thing is for certain, however. As long as we endeavor to instruct students, to help them improve their lives, and strive to create a learner-centered environment, we will be engaged in the discussion regarding “institutional effectiveness.”

How do we measure “institutional effectiveness?” In California, many constituents have many differing ideas. Legislators feel institutional effectiveness is embedded in various legislation and changes to title 5. The Chancellor’s Office is look at a student success scorecard. Administrators look to numbers of degrees conferred. Institutional researchers look to graduation rates, student persistence, and successful grades. The Business community looks at procurement of employment and salary increase. Faculty look to the learning centered environment where classroom success is measured. There are many different measurements which can imply “institutional effectiveness,” and so it goes with the successful attainment of learning outcomes and “closing loops.”

The SLO process at Chaffey College has resulted in hundreds of changes, all pointed towards student success, and ultimately, “institutional effectiveness.” It is Chaffey College’s SLO philosophy that the successful completion of various course SLOs – the closing of the loops at the course level – that collectively contribute to creating students who can communicate, both verbally, visually and written; critically think by analyzing, evaluating, questioning, computing, comparing and contrasting; are information literate and can scrutinize information and its sources; are active citizen who are globally aware of important social, ecological, economic and political issues; and students who can advance and sustain their own personal, academic and career development.

The degree to which we are successful at Chaffey in creating graduates who exhibit these qualities is in some measurement, the degree to which we, as a college, are effective as an institution. The college has approximately 900 active courses. Close to 700 of these courses have had at least one SLO assessment, sometimes as many as three or four assessments. This represents a tremendous amount of dialogue aimed at directly improving the student experience in the classroom.

As evidence of the link between the course level SLO activity, a more effective learning experience, and ultimately institutional effectiveness from an instructional and student services perspective, Appendix XX is a list of specific items identified by faculty for change, reinforcement, addition or elimination, as faculty completed the 5 steps of the SLO process. Sometimes these changes resulted in a change to a syllabus. Sometimes these changes resulted in a change to the overall curriculum within a program of study. This list is not complete by any means, and a current listing of activities involved with closing loops on course level SLOs is available upon request from the SLO facilitator. This list is ordered by school, with examples of course SLO activity and results.
SUSTAINABLE CONTINUOUS QUALITY IMPROVEMENT

Plans for the Future

Since Chaffey College’s initial forays into the student learning process in the early years of the twenty-first century, much has changed locally at the college, statewide within the California Community College system, and with the state of California. Historic budget deficits within the state and the community college system drove many a decision-making process over the past 5 years. In January 2011, the Community Colleges Board of Governors embarked on a 12-month strategic planning process to improve student success. Pursuant to Senate Bill 1143 (Chapter 409, Statutes of 2010), the Board of Governors created the Student Success Task Force.

The Student Success Task Force examined best practices and effective models within higher education throughout the nation with the goal of improving educational achievements here in California. The Task Force adopted a set of student success outcomes metrics and recommended that the California Community College system define success using the following metrics:

- Percentage of community college students completing their educational goals
- Percentage of community college students earning a certificate or degree, transferring, or achieving transfer-readiness
- Number of students transferring to a four-year institution
- Number of degrees and certificates earned

In addition to these metrics, “key momentum points” were also identified as having positive impacts on student success. These momentum points include the following:

- Successful course completion
- Successful completion of basic skills competencies
- Successful completion of first collegiate level mathematics course
- Successful completion of first 15 semester units
- Successful completion of first 30 semester units

The Accrediting Commission for Junior and Community Colleges (ACCJC) has also endorsed these metrics and includes the following as “common measures of effectiveness”:

- Course completion
- Enrollment in next course of a sequence
- Completion of sequences, certificates and degrees
- Graduation, transfer, and job placement
• Student learning of general skills and knowledge areas broadly applicable to life and work – degree SLOs
• Student learning of specific skills sets and knowledge associated with the area of study – program SLOs

ACCJC also acknowledges the strong federal and national pressures for accountability in the last two areas.

In keeping with the pulse of the state of California and its community college system, and in acknowledgment of calls for increased accountability requested by the Department of Education through the college’s regional accrediting body, ACCJC, Chaffey College is continuing its commitment to the student learning process developed in 2008.

Chaffey will continue to plan, budget for, and implement processes which lead to institutional effectiveness in the areas of program review, planning and student learning outcomes in the decade to come. The college is proud to state that authentic dialogue and assessments regarding student learning outcomes are occurring campus-wide. Decision-making from the course level through the program level is based on many factors, not the least of which is SLO assessment evidence. Gaps in the SLO process do exist, but there is a robust institutional infrastructure to identify these gaps and mitigate them. This infrastructure includes administrative support from the college’s superintendent/president and vice presidents, oversight by the college deans, review and revisions from the Outcomes and Assessment Committee, and substantive support from the Faculty Senate and the Curriculum Committee. Comprehensive reporting regarding the status of SLOs is now available through the Curricunet reports outlined in this document.

Future planning for the college’s SLO process involves fine-tuning the process that has served the college well thus far. Future SLO projects include the following:

1. Studying the feasibility of developing a chat room feature to attach to the course SLO page in Curricunet.
2. As was done with curriculum and SLOs, continuing to streamline certificates and degrees and develop robust methods for assessing student success.
3. Continuing to investigate authentic measures for assessing the college’s Core Competencies. This may include utilizing the Community College Survey of Student Engagement (CCSSE) to embed Core Competency assessment questions.
4. Investigating the inclusion of the Hope and Mindset frameworks, which are particularly relevant to the affective domain, into the Core Competencies.
5. Investigating training opportunities for adjunct faculty and SLO process.
6. Continuing to revise PSR rubric for evaluation program SLOs.
7. Continuing to create measures of reporting SLO results to the college community that encourage engagement and inspire participation.
8. Continuing attending SLO training opportunities.
Conclusion

The mission of Chaffey College is to foster learning in its students. Chaffey College ensures its resources and processes support student learning, continuously assess that learning, and pursue institutional excellence and improvement. This second edition of the *Pathways to Proficiency* lays out the process for how Chaffey College measures and documents this. Chaffey College maintains an ongoing, self-reflective dialogue about its quality and improvement. Chaffey College strives to improve student learning through ongoing, systematic, and integrated planning. (Standard I) Instructional programs, student support services, and library, student success centers and other learning support services facilitate the achievement of the college’s Core Competencies. (Standard II) Human, physical, technology, and financial resources enable these programs and services to function and improve. (Standard II). Ethical and effective leadership throughout the organization guides the accomplishment of the mission and supports institutional effectiveness and improvement. (Standard IV)

The college-wide dialogue which has taken root speaks to the institutionalization of the SLO process. The college’s curriculum is leaner, more strategic and robust. Faculty is more engaged in the SLO process than ever before. Professional development activities, such as the Summer Institute with the Faculty Success Center fill up to capacity. This all has a ripple effect on student success. This activity also leads, in both direct and indirect ways, to a more informed institutional planning process.
APPENDIX A - Courses Closing the Loop Curricunet Report

Athletics and Physical Education

Course: PEACT 35 Cardio Fitness for Life
SLO: Upon the successful completion of PEACT 35 (grade C or higher), students will implement appropriate aerobic skills necessary to successfully complete a Cardio For Life class.
Summary: Fall 2012:
We used a 12 minute run test with a rubric on cardiovascular improvement. There were 7 PEACT classes with a total of 93 students that participated. We showed a 91.8% total success rate overall with the use of this assessment tool.
Closing the Loop: The rubric scores revealed that students have an above average improvement was made in cardiovascular fitness at this course level. The criterion for success in this assessment was met with students being able to demonstrate appropriate cardiovascular fitness that is needed in a cardiovascular class. With this said faculty concluded instructors can introduce different types of cardiovascular techniques throughout the semester to gain a higher educational knowledge in this area.

Course: PELEC 17 First Aid and Emergency Response to Community Disasters
SLO: Upon the successful completion of PELEC 17 (grade C or higher) students will be able to identify areas of critical thinking to enhance concepts learned in class.
Summary: We used an Assessment Test asking 5 questions on a Critical Thinking Assessment. There were 6 different classes and a total of 121 students that participated. We showed a 65.4% success rate overall totaling all 5 questions, but with eliminating questions #1 we increased our success rate to 74.7% overall. Question #1 had a 28% success rate compared to questions 2-5 which had a range of 68% - 79% success.
Closing the Loop: While a criterion for success in this assessment was met, it is necessary to address the low results on question number one dealing with students questioning information that they hear or read in a course. Faculty concluded to emphasize this areas of critical thinking into their classes to facilitate further student learning.

Course: PETEAM 6 Basketball Team Activity, Men
SLO: Students who successfully complete PETEAM 6 with a "C" or better will be able to develop proper sportsmanship skills.
Summary: Spring 2012:
We used a rubric on sportsmanship with a 16 point maximum from poor, fair, good to excellent. There were 19 PETEAM classes and a total of 465 students that participated. We showed a 79.2% total success rate overall with the use of the assessment tool.
Closing the Loop: Spring 2012:
The rubric scores revealed that students have an above average understanding of sportsmanship at this course level. We did see lower scores in attitude and cooperation; therefore instructors will be emphasizing these areas of team support throughout the class. In the future a class assessment of a pre test would be effective to see how students view sportsmanship before the starting of the class.

Counseling and Matriculation

Course: GUID 2 Essentials of Student Success
SLO: Students value, appreciate, and effectively use technology to research, plan, and pursue their educational and career goals.
Summary: Second, Table 2 indicates the pre-assessment student self-ratings as to whether students feel that they appreciate technology and are comfortable using technology to help with their educational and career goals (3 or 4 points on the rubric). The results indicated that 83% of the students rated themselves as effectively using technology or as being comfortable with using technology. In addition, the post-assessment indicates that students were much more likely to self rate themselves as effectively using technology or as being comfortable with using technology (see Table 2A). For instance, 90% of the students self-rated themselves as effectively using technology or as being comfortable with using technology.

School of Business and Applied Technology

Course: ACCTG 1B Managerial Accounting
SLO: Upon successful completion of ACCTG1B (grade "C" or higher) students will be able to prepare and analyze manufacturing statement.
Summary: Fall 2010 & Spring 2012:
Students successfully completed assignments to analyze and prepare a manufacturing statement. In each semester (since Fall 2010) students scored above the benchmark of 75%.
Closing the Loop: Fall 2010 & Spring 2012:
1) Use more group in-class assignments so that students are able to create pathways to success by utilizing additional resources.
2) Use additional case studies to illustrate ethical behavior in practice.
3) Additional in-class time for group projects.
4) Try to employ more growth mindset strategies in face-to-face class.
Course: ACCTG 435 Payroll Accounting
SLO: Upon successful completion of ACCTG 435 (grade C or higher), students will recognize and apply requirements for federal and state labor laws.
Summary: Spring 2012:
Students successfully completed an end of semester assignment on Federal and State Payroll laws, procedures and ethical behavior by providing examples in current events or experience.
Closing the Loop: Spring 2012:
I gave a 6 question pre exam the first day of class to prepare students for what would be covered in class, I gave the same exam close to the end of the semester, and the results showed that 80% of the class learned those concepts. Many of the students struggled with the math and the basic computer skills in the class, to improve the outcomes; I can spend more time in some basic math and computer training during class, as well as encourage some self help resources. Along with attendance, these were the main struggles of 20% of the students.

Course: ACCTGFS 452 Volunteer Income Tax Assistance Program II
SLO: Upon successful completion of ACCTGFS-452 (grade "C" or higher), students will be able to apply basic tax law and determine filing requirements for actual tax returns.
Summary: Spring 2012: 100% of all active students completed a tax return and 89% of students completed the minimum number of lab hours required.
Closing the Loop: Spring 2012:
All active students prepared a minimum of one tax return utilizing the tax preparation software. Next year, I would prefer for students to each prepare more than one return. This can be accomplished by partnering students so that multiple students can work on a return. Also, additional advertising efforts will be made so that additional taxpayers come to the site seeking our free services.

Course: AUTOTEC 417
SLO: Graduates of the Automotive Technology Program will have successfully completed the tasks required for employment and certification as an automotive technician.
Summary: Sect 66868 Fall 2011: 66% completed a passing number of tasks.
Closing the Loop: Sect 66868 Fall 2011: Under target - A critical piece of equipment limited completion of tasks for some students. Next assessment will confirm or refute this anomaly.

Course: AUTOTEC 450 General Automotive Technician A
SLO: Graduates of the Automotive Technology Program will have mastered the information required for ASE certification.
Summary: Section 72300 Fall 2012: 61% scored at least 70% when combined with task completion per assessment change noted above. Section 72300 Fall 2012: Percentage improvement over Spring 2012 reflects focus on exams and task completion as a more accurate representation of student accomplishment.
Section 62789 Fall 2010: Target hit - no adjustments at this time. Watch for percentage degradation.
Closing the Loop: Section 72300 Fall 2012: Target hit - no adjustments at this time.
Section 62789 Fall 2010: Target hit - no adjustments at this time.

Course: BUS 10 Introduction to Business
SLO: Upon successful completion (grade "C" or better) of BUS 10, students shall develop the ability to recognize an ethical dilemma and make the most appropriate response.
Summary: One section was selected from Fall 2011. Results were tabulated by student. Students received a "0" for any incorrect answer, and a "1" for any correct answer. Each students’ average was calculated, as was an overall class average and the class performance by question.
Closing the Loop: Faculty was pleased that the overall average of the embedded assessments exceeded 70%. However, faculty must make certain students understand the Legal/Ethical Matrix, organizational culture and ethics, relative ethical standards, and Sarbanes-Oxley. Faculty must also clarify the definition of social responsibility as it relates to ethical behavior.

Course: BUSMGT 480 Principles of Supervision
SLO: Upon successful (grade "C" or better) completion of BUSMGT 480, student shall demonstrate a working knowledge of the basic management concepts of planning, leading, controlling and organizing.
Summary: Students were given a pre and post test in Fall 2012. Students scored an class average of 43.2% on the pre-test. Upon completion of the semester, students scored a class average of 60.3%.
Closing the Loop: Although the post-test scores improvement significantly in comparison to the pre-test scores, full-time faculty are not certain if the adjunct instructor covered all the material assessed on the pre- and post-tests. Most of the questions that were answered incorrectly were definition/vocabulary. Instructors must emphasize key management terminology (i.e. management by objectives, decision tree,
motivation-hygiene theory, etc.). One hundred percent of the class answered question #17 incorrectly. Faculty has concluded that the question was poorly written and will be replaced.

**Course: BUSMKT 40 Marketing Principles**

**SLO:** Students to complete a group project that includes a written and oral component.  
**Summary:** Students taking BUSMKT40 (was BUS40) during the day section in Spring 2010 and Spring 2011 prepared a Promotional Plan. Students were divided into groups. The plan was based on an assignment prepared by the instructor. The projects were evaluated according to an Excel-based rubric that allows for line item assessment of student performance on the components of the rubric. In Spring 2010, the students scored well overall, averaging 82% for the combined written and oral portions of their projects. However, serious deficiencies were noted in the following areas: 1. Executive Summary (44%), 2. Promotional Objectives (61%), 3. Implementation, Coordination & Integration (58%), 4. Measurement of Effectiveness and Control (49%), and 4. Evaluation and Follow-Up (33%). In Spring 2011, students prepared similar Promotional Plans pursuant to an identical set of instructions. Students scored better overall on the projects during this term, averaging 88%. Students also improved their performance on the areas that were problematic for students spring semester 2010. In 2011, students scored as follows: 1. Executive Summary (79%), 2. Promotional Objectives (85%), 3. Implementation, Coordination & Integration (81%), 4. Measurement of Effectiveness and Control (70%), and 4. Evaluation and Follow-Up (83%). These improvements were substantial.  
**Closing the Loop:** Following the assessment of student performance in spring 2010, the instructor noted the large discrepancy between the students’ overall performance on the project and the deficient areas noted in the summary of evidence. He decided that he had to place greater emphasis on the deficient areas during classroom lecture and discussion. He also determined to provide the students with a copy of the rubric when the assignment was given to the students. This way they could see its importance to their grade on the project. Finally, the instructor spent time explaining to students why they should not wait until the last minute, only to find that a team member failed to produce their portion of the group work. In other words, they should give themselves time to make up for deficient or missing work from a team member. The instructor intends to continue emphasizing these areas, providing the rubric with the assignment, and placing particular emphasis on preparation of effective executive summaries.

**Course: BUSOT 40A Beginning Computer Keyboarding**

**SLO:** Upon successfully completing BUSOT 40A, students will be able to key using proper and efficient keying techniques a minimum 20 words a minute with 97% accuracy for three and five minutes on at least three instructor-administered timed writings.  
**Summary:** In Fall 2010, we met our SLO goal that students would key at least 20 words a minute on three- and five-minute timed writings and production assessments. However, we found that students did not do as well in the hybrid platform and have since temporarily stopped offering this skills course through this platform until we can develop methods to improve success in this delivery mode.  
**Closing the Loop:** During several meetings during the fall of 2011 semester BUSOT faculty spent several hours reviewing and comparing the assessment results of the majority of our 40A classes. The review has revealed discrepancies among faculty in interpretations of measuring skill levels and performance in both BUSOT 40A and BUSOT 40B. After many collaborative meetings, this has led us to create a master list of agreed upon approaches and measurable skill levels for these courses. We will review the results of the application of the master list approaches during the 2012-13 academic year.

**Course: BUSOT 410B Microsoft Office Publisher - Expert**

**SLO:** Upon successfully completing BUSOT 410B certificate and degree programs, students will be able to use the Mail Merge Wizard and select and filter records in a data source.  
**Summary:** Overall, I am pleased with the results of the review as they are significantly higher than our goal of 70% success. This BUSOT 410B class scored measurably higher than the 410A class that feeds it. Clearly, we lost some of the students who struggled in the 410A and the higher performing students advanced to 410B. This has caused me to be even more determined to improve the performance of the 410A feeder class. As well, although these 410B performances are outstanding, I would like to see even higher scores and more advanced projects to meet the challenges that these students are able to accomplish. 
**Closing the Loop:** This assessment process has caused me to consider my approach to teaching this Distance Education course. While, I stay connected to my students giving them assignments and feedback and cannot readily find ways that I can influence them to score more consistently high, I plan to have the students engage with each other more using the Discussion Forum and collaborate more with each other on individual assignments and to make more use of students bringing into the course challenges from real-life desktop publishing projects to complete.

**Course: BUSPL 400 Introduction to Paralegal Studies**

**SLO:** Upon the successful completion of BUSPL 400 (grade “C” or higher), students shall demonstrate the ability to identify legal issues from hypothetical legal situations and apply laws to solve the legal issues by working together in teams.  
**Summary:** Students on the first midterm exam were given a hypothetical situation where five key legal issues relating to attorney and paralegal professional ethics should be identified by students and then for students apply the laws to determine whether the laws are applicable.  
**Closing the Loop:** On average, students have done really well (above 80%) for four of the five legal issues. It seems the professor should pay more attention to the discussion of duty of confidentiality for attorney and paralegal professional ethics.
Course: CIS 1 Introduction to Computer Information Systems  
SLO: Upon successful completion of CIS-420 (with a grade of C or higher), students will be able to install and configure a hardware-based firewall.  
Summary: Student grades on Firewall project will be maintained. See attachment  
Closing the Loop: Reinforce/improve hardware firewall lectures and hands-on projects.

Course: CISCO 4 CISCO Internetworking 4  
SLO: Students who successfully complete Cisco 4 (grade C or higher) will be able to set up a Frame Relay circuit between two routers.  
Summary: Frame Relay proficiency assessment: Frame Relay proficiency assessment.docx  
Closing the Loop: Spring 2011, 2012 - Reinforce and improve design, maintenance and troubleshooting skills on Frame Relay circuits. Additional lecture time may be needed in future to assist students on this task.

Course: CISGAME 402 Fundamentals of Game Development II  
SLO: Upon completion of CISGAME 402, students will be able to design and express the logic of the game using pseudocode and development tools.  
Summary: Average scores for project one and two by section by semester.  
Closing the Loop: Average scores by semester will be monitored and teaching methods and projects will be modified as necessary.

Course: CISPROG 1 Introduction to Computer Programming  
SLO: Upon completion of CISPROG 1, Students will be able to Compare and contrast programming languages and demonstrate the use of syntax of a computer language.  
Summary: Average student final exam scores by section, by semester  
Closing the Loop: Average scores by semester will be monitored and teaching methods and projects will be modified as necessary.  
SPRING 2012 - 58% is average score of final exam. This is lower than expected and test

Course: FIRETEC 7 Strategies and Tactics  
SLO: Upon the successful completion of Fire Tec 7 (Grade C or higher in order to go on to the fire academy) students will demonstrate a knowledge of the principles of fire control through the use of manpower and equipment.  
Summary: The class average on the final was 67%. The benchmark was not met.  
Closing the Loop: The instructor was disappointed with student results. It appears as though the students did not study for the final exam. After attending 2012 Summer Institute, the instructor plans to incorporate some of the techniques covered, including the material on how to study and review. Instructor also feels the students are not reading the textbook. Instructor watched a Webinar from Cengage regarding review questions and students' use of these questions, and plans to incorporate this technique. Instructor will assess again in the Spring 2013. Instructor feels that the SLO process has given him a direction and looks forward to measuring the change with his students next spring.

Course: IET 405 National Electric Code  
SLO: Upon successful completion of IET-405 (With a grade C or higher) students should be able to calculate what wire size to use for controls based on ampacity loads.  
Summary: Students scored 79% of the overall grade  
Closing the Loop: Although they score above the target was not as high as other areas may need to add more on class explanation.

School of Health Sciences

Course: NURACT 420 Acute Care Technician  
SLO: Upon completion of NURACT 420, the student will identify alteration in vital signs and intervene appropriately.  
Summary: Su 12: 100% of students answered identified questions correctly see attachment  
Closing the Loop: Su 12 At this time we will continue to use this assessment as it speaks directly to the stated outcome and is an important ability for students who complete this program and obtain jobs in this role.

Course: DENTAL 430 Clinical Practice  
SLO: Students that successful complete (C or higher) DENTAL 430 master skills required in prerequisite DA courses through practice and participation in clinical experiences in the community  
Summary: 12/2010 80% of students enrolled in DENTAL 430 received a grade of "C" or better.  
Closing the Loop: Students were referred for a remediation plan that will include, but not limited to, additional practice, additional course work, or utilization of appropriate success center.  
Course: GERO 404 Health and Wellness for Older Adults
SLO: Upon completion of Gero 404 (grade C or higher), students will be able to describe the importance of planning for optimal health and security during their later years by identifying changes they have made (or will make) in their personal lifestyle.

Summary: SP 2010
4 Well above expectation-n8=24.24%
3 Above expectation-n7=21.21%
2 At expectation-n11=33.33%
1 Below expectation-n7=21.21%
Weighted Avg = 2.4848

Course: NURAST 420 Home Health Aide
SLO: Upon successful completion of NURAST 420 (75% or greater on all course work), students will be able to identify nutritional needs of clients in the home environment using current nutritional guidelines. 10/12 NURAST 420 (75% or greater on all course work), students will be able to identify special diets for clients in the home environment.
Summary: All students enrolled passed with 75% or greater. 1/12

Course: NURADN 26 Maternal Newborn Nursing
SLO: Upon the successful completion of NURADN 26 (pass rate of 75% or higher), students will distinguish between internal and external fetal monitoring.
Summary of Evidence - Attachments:
Antepartum/EFM quiz: Antepartum Quiz.doc

Course: NURVN 405 Beginning Medical Surgical Nursing
SLO: 12/2012 Upon completion of NURVN 405, students will be able to determine appropriate patient outcomes and nursing interventions for patients with disorders of the musculoskeletal system.
(OLD) Upon completion of NURVN 405, students will be able to identify and respond to characteristics and symptoms in patients with diagnoses related to the musculoskeletal, integumentary, genitourinary, and gastrointestinal systems.
Summary: 12/2012 Upon completion of NURVN 405, students will be able to determine appropriate patient outcomes and nursing interventions for patients with disorders of the musculoskeletal system.
(OLD) Upon completion of NURVN 405, students will be able to identify and respond to characteristics and symptoms in patients with diagnoses related to the musculoskeletal, integumentary, genitourinary, and gastrointestinal systems.
Closing the Loop: 12/2012 Reviewed sub-specialty question topics and compared curriculum to NCLEX test plan. At this time, no changes will be made to curriculum, but will reassess in Spring 2014 to determine if changes need to be made to course content in this area. 8/11 Faculty are currently in discussions (at monthly faculty meetings) regarding the meaning/significance of the HESI results. Faculty would like to see results from more student cohorts to get a better picture of what, if any changes need to be made to either the assessment tool, the benchmark for success, or the curriculum.

Course: PHARMT 401 Pharmacology of the Body Systems I
SLO: Students will describe or identify the basic structure and function of a specific body system.
Summary: Fall 2011 - 77% of students scored 70% or higher on all course exams.
Closing the Loop: 4/9/12 Considered effectiveness of means of assessment in accurately reflecting course SLO. The program will use same means of assessment for one more cycle, Fall 2012, to finalize determination on whether or not to change means of assessment.

Course: RADTEC 25 Anatomy and Radiographic Positioning II
SLO: Spring 2012/2011 Students successfully completing RADTEC 25 (grade "C" or higher) will demonstrate knowledge of radiographic positioning of the vertebral column.
Summary: Spring 2012--Students averaged 90% on embedded questions on the vertebral column.
Summary of Evidence - Attachments:
Assessment Table Tracking – RT 25: RT25 SLO Tracking Dec 2012.pdf
Closing the Loop: Spring 2012--the faculty discussed the results and the efficacy of the assessment tool and determined it was appropriate.
School of Language Arts

Course: CHIN 2 Elementary Mandarin Chinese
SLO: Upon the successful completion of CHIN 2, (grade C or higher), students will confidently engage in daily conversation targeting survival needs.
Summary: 04-09-12 The assessment contained 5 categories ranging from no communicative ability (1) to superior (5). Categories assessed included pronunciation, fluency, word accuracy, word order, grammatical patterns. Results showed that the majority of students finished in the "average" or "good" categories. Results were peculiar. Under the Average category, the lowest scoring concept was word order, however, under the "good" category, the lowest scoring concept was fluency. Not sure what to make of this!
Closing the Loop: 04-09-12 one thing we noticed is that the grading may have had too many categories. Next time, just grade the various concepts to see where student weaknesses are.

Course: COMST 4 Fundamentals of Interpersonal Communication
SLO: Explain the perception process and how variables influence that process.
Summary: Perception Assessment. Table 5 illustrates findings by each of the five perception aspects (i.e., select, interpret, organize, etc). For each aspect, the table illustrates the mean response along with
Summary of Evidence - Attachments:
Perception Data 2010: Perception Data Fall 2010.xls
Closing the Loop: 68% of the sampled population scored a minimum 11 points or higher on a 15 point scale. This is 12% under the initial target criteria. Results were reported to FT and Adjunct faculty and discussed

Course: ENGL 1A Composition
SLO: Write essays that deliberately connect audience and purpose in a variety of genres
Summary: Fall 2009: 77% of students wrote essays that connected audience and purpose.

Spring 2010: 81% of students wrote essays that connected audience and purpose
Closing the Loop: Considering that the results did not meet the satisfactory SLO benchmark, the Department is discussing the details of the assessment and possible causes for the lower than expected

Course: Engl 1A Composition
SLO: Demonstrate proficiency in evaluating, integrating, and documenting sources.
(July 23, 2012)
Summary: 82.6% of students assessed (542/656 students) were at the proficiency or mastery level. This exceeds the criteria for success and the historical mean success rate for the course (67.4%).
(July 23,2012) Summary of Evidence - Attachments:
Eng Dept - Comp. SLO Results - Spring 2012.xls: Eng Dept - Comp. SLO Results - Spring 2012.xls
Eng Dept - Composition SLOs - 2009-2012: Eng Dept - Composition SLOs - 2009-2012.doc
Closing the Loop: The department will (1) examine the disparity between the SLO proficiency rates and the success rates in this course (2) develop strategies for better instruction of integrating research.
(July 23,2012)

Course: ESL 503 Pronunciation of American English
SLO: Identify the speech organs and places of articulation
Summary: Students demonstrated in class, by touching and pointing, that they understood the names of the articulatory organs. Part A of Quiz 1 verified that they had a high degree of accuracy. Part B covers th
Summary of Evidence - Attachments:
quiz 1 9/19/2012: newest 508 quiz 1.doc
Closing the Loop: Modify the syllabus to spend more time covering a particular concept/topic. e.g. The phonemes in the quiz are reviewed and recycled more frequently.

Course: JOUR 10 Newswriting
SLO: Identify and properly integrate appropriate sources for a traditional news article.
Summary: Spring 2012: 20/23 students were proficient in this outcome = 87%
This exceeds the criteria for success as well as the historical mean success rate for the program (73.3%).
Summary of Evidence - Attachments:
Journ Dept - SLO Results - Spring 2012.xls: Journ Dept - SLO Results - Spring 2012.xls
Closing the Loop: In the fall, the syllabus for the course will be revised by the new adjunct instructor. In 2012-2013, the COR will be updated as well.

Course: SPAN 2 Elementary Spanish
SLO: Students should be familiar with the geography of the countries and regions where the target Spanish is spoken.
Summary: not all students scored at the 70% level
Closing the Loop: faculty have not used the same approach to covering this content and course SLOs were revised;

School of Mathematics

Course: ASTRON 26 Stars and Galaxies
SLO: Communicate underlying concepts in stellar and galactic astronomy, using examples: a. The universe contains structure at a wide variety of scales: planets, stars and galaxies. b. Structures in the universe are formed by the action of physical processes.
Summary: Students averaged 86% on questions embedded in exam. See attached file for question text.
Closing the Loop: Meets target. However, it is noticeable that the understanding of solar system contents is poorer than understanding of galaxy contents, so this Chapter 1 material should be re-emphasized at beginning of Galaxy portion of course. An in-class activity has been developed for this purpose and has been included in Spring 2013 activity packet for Eisberg section. Versions of these questions (revised for clarity & consistency) will be included in assessment at end of Spring 2013 term, though for ease of adjunct administration, this will probably cease to be embedded and simply be freestanding SLO question set.

Course: BIOL 10 Concepts in Biology
SLO: Distinguish questions that can be addressed scientifically from those that cannot, and identify basic components of the scientific method as it pertains to biological systems ranging from molecules to the biosphere.
Summary: Spring 2012: Students demonstrated a proficient understanding of the scientific method (for each question, >95% students answered correctly).
Fall 2009: Assessment results are included for all students present on the day of the assessment (whether they passed the class or not). Students demonstrated a proficient understanding of the scientific method (for each question, >75% students answered correctly).
Closing the Loop: Spring 2012: No change to instruction. Concluded that the changes implemented after the 2009 assessment were effective!
Fall 2009: Results were compared to Biology 1 results & discussed at a department meeting. Teaching strategies were discussed that will aid in teaching this topic outside the lab setting.

Course: CHEM 75A Organic Chemistry I
SLO: IP Students can predict centers of high and low electron density to describe specified reactions and the underlying mechanism. Program SLO #1
Summary: F12: Of the three questions embedded, improvement seem on all question compared to Sp 12 Chem 75B. Please see attachment for additional information.
Sp 12 COR updated, revised course and program S
Summary of Evidence - Attachments:
   F 12 Chem 75A SLO 1: Chem 75A SLO 1 F12.docx
Closing the Loop: F12: Topic discussed more in lecture and lab. In addition, similar multiple choice questions practices using i-clickers. Information shared with next instructor for Chem 75A.

Course: DRAFT 20 Computer-Aided Drafting and Design
SLO: Students that complete DRAFT 20 create duplicates of existing drawings using CAD geometry drawing tools including lines, arcs, conics and splines.
Summary: FA09:
Grade spreadsheets, final exam, student exams
SP10:
Grade spreadsheets, final exam, student exams
SP11:
Grade spreadsheets, final exam, student exams
FA11:
Grade spreadsheets
Summary of Evidence - Attachments:
FA09 ASSESSMENT ZIP FILE: DRAFT20 FA09 EVIDENCE.zip
Course: ESC 5 Oceanography
SLO: Upon successful completion of ESC-5 (grade "C" or higher), students will be able to distinguish between what is fact, hypothesis, and theory in earth science.
Summary: Spring 2012
95% of class answered correctly
Fall 2012
Summary of results:
41. Scientific inquiry involves:
   a. observation       b. forming hypotheses       c. experimentation       d. all of the above
   90% correct
Closing the Loop: Spring 2012
A solid majority of the class recognized the basic steps in the scientific method so present method of instruction is adequate.
Fall 2012
Use of Results: Students clearly understood the process of scientific inquiry

Course: ENGIN 30 Engineering Application of Digital Computation
SLO: Upon the successful completion of ENGIN 30 (grade C or higher), students will identify, formulate, and solve an engineering problem with C++ software.
Summary: 6/6/12
There were 3 assessment questions and a finale project presentation end of course in Spring 2012 dealing with students demonstration and to identify, formulate and solve an engineering problem
Summary of Evidence - Attachments:
   Spring 2012 Assessment results: Spring 2012 Engin 30, Slo results, spring 2012.xls
Closing the Loop: Instructor will emphasize on formulating the engineering problem and incorporate it with computer skills and computer language as it pertains to Engineering from the beginning of the semester; instructor will also fold in more content into group projects.

Course: GEOG 3 Geography of California
SLO: Know over 66% of places/locations on a blank map of CA.
Summary: This represents a success rate of about 81% out of the base requirement of 66%.
Summary of Evidence - Attachments:
   SLO for Geo. 3: SLO results for Ge1.doc
Closing the Loop: Most students correctly located features on a map of CA.
Improvement seen from first day of class to last day of class.
Same assessment will be used next time.

Course: GEOL 1 Physical Geology
SLO: Upon successfully completing GEO-1 (with a grade "C" or higher), students will be able to identify unknown minerals with lab testing procedures.
Summary: Fall 2010
For Minerals identification:
10pts 7 students
9pts 6 students
8pts 9 students
7pts 3 students
6pts 1 student
5pts 1 student
The more than 70% of students scored 70% or better
Summary of Evidence - Attachments:
SLOFall2010documentII: SLOFall2010documentII.doc
SLOFall2011document: SLOFall2011document2.doc

Closing the Loop: Fall 2010:
Mineral and rock identification labs work best when they are run for about 40 minutes and then another lab unit is undertaken like earthquake tower construction. Fast pace and variety should be emphasized.

Spring 2012: #67831
Students become confident in identifying unknown minerals using the lab testing procedures after about 3 lab sessions. They retain this ability as they move onto rock identification. Real world challenges though continue as they try to identify rocks and minerals during field trips. On going improvements in mineral and rock identification include extending the lab collection of commercial rocks from the flooring departments of home improvement stores and bringing back rocks and minerals collected on student field trips. An expression sums up this chore: “the best geologist has seen the most rocks”.

Course: MATH 425 Intermediate Algebra
SLO: Translate verbal descriptions into mathematical notation.
Summary: [Fall 2012]: N=375. 200 ones and 175 zeros. Approx 53%. Number decreased substantially from Fall 2011. [Fall 2011]: N=204. 152 ones and 52 zeros. Approx. 75%. Criteria for Success Met.
Closing the Loop: [Fall 2012]: The math department will have to discuss the possible reasons for a significant decrease in student’s ability to work with word problems. We believe further semesters of evidence regarding this specific SLO is needed. [Fall 2011]: The Math Department will discuss and share appropriate final exam questions and expectations during department meetings, FLEX activities, and through email.

Course: PHYS 6 the Ideas of Physics Lab
SLO: Su 12: 1) Laboratory: Students use experimental techniques in the laboratory environment which include correctly using scientific equipment.
Program SLO 2, 3 IP
Previous SLO - No longer valid
By successful completing Physics 6 with a grade of C or better, 50% of the students will accurately apply the scientific method as shown the ability to successfully complete a hands-on lab application question on the final lab exam
Summary: Su 12 Previously written Phys SLO’s were not assessable as written. All Physics course SLO’s were rewritten in a manner that the SLO could be meaningfully assessed.
Closing the Loop: Su12: At the Physics department meeting involving all adjunct instructors, the proposed SLO’s were discussed and modified to reflect the various math requirements. New SLO will be assessed in Fall 2012.

Prior information: If embedded question shows lack of understanding, modify instructional methods. If embedded question shows understanding, continue good work.

School of Social and Behavioral Sciences

Course: AJ 8 Criminology
SLO: Upon the successful completion of AJ 8 (grade C or higher), students will compare and contrast the core elements of at least three theories of criminal behavior.
Summary: 55% of students assessed in Spring 2012 met or exceeded the SLO minimum performance threshold
Closing the Loop: Set AJ-1 as a prerequisite. Set Intro to Psych/sociology as an “Advisory” for the course; Spend additional time covering theories

Course: ANTHRO 2 Introduction to Archaeology
SLO: Understand key concepts in Archaeology.
Summary: June 14, 2012: In Spring 2012, 26 students took this assessment question; 42.3% answered correctly.
Closing the Loop: The sample is small, and the Department plans to assess again when the course is offered in Spring 2013. The Department will also review this question and determine if it needs to be modified.

Course: CDE 2 Child Growth and Development
SLO: Students will be able to recognize major theorists in child development education and identify key components of their theories.
Summary: 17% are at 90% proficiency
11% are at 80% proficiency
13% are at 70% proficiency
16% are at 60% proficiency
43% are at 50% proficiency

Summary of Evidence - Attachments:
CDE 2 Means of Assessment: CDE 2 Evidence of Assessment.doc

Closing the Loop: Upon reflection of the data, the exam will be redesigned and given at a later date to allow time to process information.

Course: CRSCI 4 Public Relations and Corrections

SLO: Upon the successful completion of CRSCI 4 (grade C or higher), students will be able to demonstrate an understanding of the relationship of courts and corrections with their community.

Summary: 6/20-12
Spring 2012 Final n=28; 19 (68%) students answered this question; of these 19 students, 12 (63%) students answered the question correctly;

Closing the Loop: For the Fall 2012 semester, the instructor plans on trying the following:
1. Revise the format of the final so that all students must answer the questions involving course SLOs;

Course: ECON 4 Principles of Microeconomics

SLO: Students will demonstrate an understanding of the demand and supply model including an analysis of deviations from the optimal output level.

Summary: Fall 2010 & Spring 2011:
Course level SLO results for fall 2010 and spring 2011 showed that students met the benchmark in fall 2010 with 60% of students scoring 60% or better. In the spring 2011 assessment, 74% of students scored 60% or better on the assessment. Program level SLOs were assessed at the course level using embedded assessment prior to fall 2010. Results demonstrated that students in Econ 4 met or exceeded the benchmark. Unfortunately, the sample size was small. Many adjunct professors failed to participate in program level SLO assessment. In fall 2010, the Economics Department began course level SLO assessment using standardized course SLO assessment instruments. Efforts were made at all levels (administration and faculty) to encourage adjunct instructor participation in course level SLO assessment. In fall 2010 and spring 2011, the department administered the first rounds of course level SLO assessments. Students in Econ 4 courses were assessed on their ability to demonstrate an understanding of the demand and supply model, including deviations from the optimal output level. The students performed at or above the expected level on the assessment instrument as a whole. However, the detailed analysis of the choices student selected identified areas where students were struggling with some of the concepts. These areas were identified and placed on the agenda for discussion at department meetings.

Closing the Loop: The SLO assessment results were discussed at department meetings. A typo on one of the SLO questions was corrected for spring assessment; students in spring slightly exceeded the benchmark for this SLO question once the typo was corrected. The detailed analysis of SLO assessment questions showed that students seemed to have difficulty with questions involving shifts of both demand and supply. Techniques to improve student understanding of this concept were discussed. One approach a professor found to be relatively successful involved drawing the demand shift and the supply shift on separate graphs, identifying the impact on price and quantity on the separate graphs, and then asking students to identify what the graphs had in common and what was different. This seemed to help students identify the impact on price and quantity when both the demand curve and supply curve shift at the same time.

Course: HIST 21 the Sixties in American History

SLO: Upon the successful completion of HIST 21 (grade C or higher), students will know the differences between primary sources, such as the Port Huron Statement of SDS, and a secondary source, such as a historians interpretation of the document. They will analyze competing historical interpretations of the history of the 1960's by finding and using sources (information competence)

Summary: Exceeds Standards 5 19%
Meets Standards 13 48%
Below Standards 9 33%

Closing the Loop: Method: We measured students in the 1 section of History 21. It was a face to face section. We normally offer only one section of History 21 in a semester and not every semester. Students were assessed on their ability to find sources in the history of the 1960's and to use those sources effectively. A rubric was used to assess whether students exceeded standards, met standards, or did not meet standards. Instructors used various research assignments for the SLO based on individual pedagogy but all assignments could be assessed using the rubric.

Results: 67% of students in the sections measured met or exceeded standards which met the benchmark set. 19% exceeded standards, 48% met standards, and 33% did not meet standards.

Closing the Loop: We do not have data for this class from previous semesters. Students in History 21 performed slightly better at the top end of this SLO than students in History 1 though not History 17. Why students in this class tended to do better at the top end of this SLO despite the class not meeting the benchmark will be explored.

Course: PHIL 76 Critical Thinking

SLO: Upon completion of philosophy 76, students will be able to articulate and critique common informal fallacies.

Summary: Phil 76, Spring 09, one section. Average score on post test was 62%, meeting the criterion for success.
**Closing the Loop:** The result for this section was lower than it could have been, because two of five questions were worded in a way that was unfamiliar to the students in the section. This underscores the importance of phrasing questions in a general enough way that students being taught by different teachers with different approaches will recognized.

**Course: PS 4 Political Theory**
SLO: Students will comprehend the role of Natural Rights in Democratic societies.
Summary: 65% of students correctly answered 4 of 5 of the post-test questions.
Closing the Loop: The results of the post-test were satisfactory, but only 15% of the students answered all five of the questions correctly. I plan on adding an in-class assignment on the relationship between natural rights and constitutional democracy in the future in order to improve these outcomes.

**Course: PSYCH 25 Developmental Psychology: Lifespan Development**
SLO: Upon successful completion of this course students will be able to identify the research methods used in lifespan development.
Summary: Table 1 illustrates student performance on the assessment tool during the spring 2010 semester and the findings stemming from the fall 2009 semester. The first 5 rows (‘Q1’ – ‘Q5’) reflect the percent of correct responses for each assessment item; the last row, however, reflects the average number of correct responses across all five items. Findings stemming from the spring 2010 implementation indicate that students demonstrated a great deal of knowledge concerning social research methods, particularly with regards to their understanding of naturalistic observation (96.8%), representative sampling (89.7% correct responses), and case studies (84.9% correct responses). Performance of spring 2010 students was also compared to the performance of the fall 2009 student on the basis of an effect size d. An effect size is a measure of the extent to which observed findings are practically significant (educational researchers typically consider effect sizes of .25 or larger as indicative of meaningful or practically significant differences). Findings, based upon effect size ds, demonstrated no meaningful overall difference between the two cohorts of students (d = -.05); in fact, no meaningful differences were found between the cohorts along any assessment item (ds ranged from -.05 to .11). Table 2 illustrates the total number of correct responses offered by each cohort. Findings were similar across both groups.

**Course: Social Science 17 Human Sexuality**
SLO: Upon successful completion of this course, students will be able to, both verbally and in written form, distinguish between the concepts of sex, sexuality and gender.
Summary: Evidence through embedded assessment reveals that 82% of the students were successful in fulfilling this SLO. Attachments: SLO3 SS17 Item Analysis SLO Data Fall 2011.xls
Closing the Loop: This embedded assessment shows this SLO is being fulfilled. We will re-assess in Spring 2012 to be sure it is being met successfully in two semester before adding another SLO.

**Course: SOC 15 Ethnic and Race Relations: U.S. and Global Perspectives**
SLO: Upon the successful completion of SOC 15 (grade C or higher), students will articulate how their racial and ethnic identities are impacted by the social structure and understand that individuals negotiate their racial identities based on contextual factors present in the social structure.
Summary: SPRING 2011: The pass rate in the post-test was 100%. This represents an increase of seven percentage points from the pre-test rate of 93%. 
Closing the Loop: SPRING 2011: Because the pre-test pass score was unexpectedly high (93%), the department will modify the means of assessment to better assess the connection between social structure and race/ethnicity.
FALL 2011: The Fall results show that the modification in the means of assessment may have produced a much more appropriate measure assessing the connection between social structure and race/ethnicity. The department will maintain the same means of assessment for the next semester and make necessary changes to further increase the pass rate.

**School of Visual and Performing Arts**

**Course: ART 14 Introduction to Drawing**
SLO: By successfully completing Art 14 (Grade of ‘C’ or higher), students will be able to illustrate the concept of modeling in the creation of a representational drawing.
Summary: Two sections of ART 14 (Introduction to Drawing) were assessed in Spring 2011. Of the 22 students who completed the assessment, 5 students earned an A, 7 students earned a B, 9 students earned a C, and 1 student earned a D. The data revealed that 55% of students were able to illustrate the concept of modeling in the creation of a representational drawing. Attachments: Assessment Instructions and Rubric; Instructions for ART Assessment-1.docx
Assessment Results Form; ART 14 Assessment GRADING RUBRIC.docx
Closing the Loop: The assessment revealed students were able to accurately render an object’s contours and create five values, but students...
still struggled to manipulate value to model the object. The data will be shared with drawing faculty who will be encouraged to review the emphasis they place on modeling during the semester. This learning outcome will be reassessed in Fall 2013.

**Course: BROADCAST 67 Beginning Radio Production**

**SLO:** Upon the successful completion of BRD 67 (grade of C or better), students will be able operate industry standard audio equipment and computer audio software.

**Summary:** Brdcast 65 Computer Assessment Exam Fall 2012: [Brdcast 65 Computer Assessment Exam Fall 2012.pdf](#)

**Closing the Loop:** There was a 9% increase in assessment scores from 85% to 94%. Post assessment score of 94% reveals that when students use the computers on a regular basis and work on projects the result will raise comprehension levels.

**Course: CINEMA 30 Beginning Motion Picture Production**

**SLO:** Upon the successful completion of CINEMA 30 (grade of C or better), students will demonstrate proficiency in cinematography.

**Summary:** Students were engaged throughout the course of the assigned project and averaged 91%.

**Summary of Evidence - Attachments:** 01 Project Camera Assessment Cinema 30.pdf; 01 Project Camera Assessment Cinema 30.pdf

**Closing the Loop:** Continue to challenge students to explore specific visual components while using a motion picture camera to record various shots and scenes. Next challenge is an assignment to critically analyze a movie scene with the criteria of composition, color scheme, lighting, image management, stylization and emotional impact.

**Course: DANCE 6A Ballet IIA**

**SLO:** Upon the successful completion of DANCE 6A (grade C or higher), students will demonstrate proper classical ballet body alignment and placement appropriate to intermediate level.

**Summary:** For these types of developmental assessments, each individual dance student is unique in their own physiology and motor skill ability, and developmental time frame. It is difficult to measure a class as a whole when each individual works at capacity of their own physical limitations and their own readiness. With this type of learning, skills mastery must take into account each dance students’ physical, mental, and emotional developmental requirements. However, the scoring of the students’ performance overall in the 3rd semester of training of intermediate ballet movement skills with regard to posture/placement/alignment revealed definite strengths and weaknesses in the various areas that were measured. Scoring will tend to be higher than the beginning class, since the students have been training longer and the body is more disciplined. The highest scores were above average (2.1 and 2.3) for plies and grand battements, which are slower paced and/or less complex and simply structured allowing for much control of placement and the ability to really concentrate on mastery. The petite allegro (jumps), scoring 2, and the barre rond de jambes, also scoring 2, were above average scoring also, but a little less than the plies and grand battements, which showed that students are gaining in strength and control for faster paced and larger-ranged movements. The lowest scores were for center adagio and pirouettes (1.9 and 1.7), which showed that as the center work becomes more complex and full ranged, more time is needed to develop the control, strength, balance, and coordination to be able to hold placement in these types of difficult exercises. The results are consistent with the developmental stages of the intermediate adult ballet student.

**Closing the Loop:** The rubric scores indicate the need to emphasize abdominal/core strength, back strength, balance, and body awareness to improve postural control in increasingly complex ballet skills especially in the center.

**Course: MUSIC 12 Electronic Music**

**SLO:** Upon the successful completion of Music 12 (grade "C" or higher), students be able to understand the workings of a workstation synthesizer

**Summary:** Of 18 students assessed there was an 83% student success rate on questions relating to synthesizer sequencing. 5.5% scored lower than 60% success rate. 12/18/12

**Closing the Loop:** The student score rate was expected. Overall on all questions assessed, 10 students scored 100%, 5-80%, 2- 60%, 1-40%. Recommendation to maintain student retention through semester to balance out the expected low achievers.

**Course: PHOTO 13 Fine Art Photography**

**SLO:** Photo 13 (with a grade "C" or higher), students will articulate the basic concepts of fine art photography.

**Summary:** n=25 students; post test consisting of 4 parts to a single question; Portfolio were rated on a scale of 1-5; 1-2 represent a below average body of work; 3-4 represent an average portfolio and 4-5 represent outstanding work;

The rating for this SLO was based on:

1. A clear and strong concept that is represented in the photographs.
2. The correct number of images are being produced for the assignment
3. Exceptional interpretation of the ideas explored in the work.
4. A use of style and composition that is connected with the concept.

Fall 2012
data - see attachment file Photo 13 SLO F2012. We will focus next year on accessing which of 4 areas are causing problems for students and how to increase the students success in the all 4 areas.

Closing the Loop: This is the most advanced photography class taught at Chaffey reflected semesters' worth of content and critical thinking. The results, overall, of this assessment were proficient and represent students' work at a proficient level of photography. The only thing to possibly consider would be to technically define what "outstanding" means for students. Also, faculty will monitor professional literature for new approaches to evaluating student portfolios; Finally, faculty across the art disciplines will continue to discuss a common rubric which addresses concepts such as imagination and creativity, and which can be used in grading a variety of capstone art projects.

**Course: THEATRE 35 Musical Theatre Performance**

**SLO:** Musical theatre students will demonstrate an understanding of vocal techniques as a major form of expression and creativity.

**Summary:** 30 students took a fill in quiz on day one of class. 9 scored 100%, while 21 scored a range of only 0-70% correct. By the last day of class, half of the students scored 100% while the remaining students only missed a smaller amount of questions. Over 75% of the students scored satisfactory in the spring of 2011.

**Closing the Loop: FALL 2011**

In the fall of 2011, I reiterated the terms on a daily basis and made the in-class quiz worth more points, so the students knew to lock in the terms and take them seriously. The batch of students in the fall, knew very little coming into the course, but 95% of the students completed the course with a satisfactory understanding of the terms. Understanding the vocal terms allows them to express themselves in a more creative manner, producing a more interesting, complete performance.
APPENDIX B - Student Services SLO Evidence

Admissions

SLO: Maintain a high level of student satisfaction with the online transcript ordering process.

SUMMARY: As Table 1 indicates, the scaled items indicate that student are very much satisfied with the process of ordering transcripts on-line. Moreover, responses to all items indicated that a large percentage of students agreed or strongly agreed with the survey statements. The open-ended responses were examined utilizing standard qualitative procedures that entail the identification of groups or categories of responses (Giles, 2002); thus, for the present analyses, the goal was to identify the categories that best characterized the perceived strengths and weaknesses of the online ordering system. A total of 581 responses addressed the strengths of the online transcript ordering process, while a total of 556 responses addressed the weaknesses of this process. While every effort was made to use such responses to identify meaningful categories of responses, not all responses could be categorized – this was largely the result of isolated comments that could not be grouped in a meaningful manner (see IR office for complete list of uncategorized responses). As such, 522 of the 581 responses (90%) addressing strengths were successfully categorized, and 305 of the 556 responses (55%) addressing weaknesses were successfully categorized.

Closing the Loop:
In response to the findings, the Admissions and Records Office worked towards eliminating the signature page requirement, at least for those students providing both their student ID and social security number. As of Spring 2008, the survey has been re-implemented to examine whether (a) there is a decrease in the proportion of responses citing discontent with the signature page, and (b) whether other pressing issues need to be attended to.

AMAN/AWOMAN

SLO: Students in the AMAN/AWOMAN Program will increase their ability to focus.

SUMMARY: In comparing self-reported pre and post-assessment scores on ability to focus, statistically significant differences were observed (t = 2.186, p = .037). However, statistical significance is often influenced by sample size. As such, effect size often serves as a better measure, controlling for sample size and assisting researchers in determining the extent to which observed differences are practically significant. Effect size measures the magnitude of the treatment effect. Educational researchers typically consider effect sizes of .20 to .49 as having affected a small practical difference, of .50 to .79 as having affected a medium difference, and .80 or higher as having affected a large difference. Additional analyses were conducted to determine whether the median responses of students on self-reported pre and post ability to focus were statistically significantly different. To determine whether differences exist, a Wilcoxon signed-ranks test was conducted to test the hypothesis that the medians are the same. In regard to AMAN/AWOMAN students’ ability to focus, post-assessment scores were lower than pre-assessment scores 16.1% of the time, equal to pre-assessment scores 32.3% of the time, and higher than pre-assessment scores 51.6% of time. Based upon these findings, statistically significant differences were observed between students self-reported pre- and post-assessment ability to focus. It is interesting to note that among the three students who self-reported their pre-assessment ability to focus as “excellent,” self-reported post-assessment ratings of ability to focus declined. Taking these three groups (scored lower on the post-assessment; scored the same on the post-assessment; scored higher on the post-assessment), further exploration occurred related to the open-ended question, “Why do you think you are at this present focus level?” For students who responded to this question, tables 3, 4, and 5 provide responses by groups.

Closing the Loop:
An examination of pre- and post-assessment data indicates:

- Statistically significant differences exist in self-reported pre/post ability to focus
- A medium effect size, suggesting that results are practically significant
- Over half of the AMAN/AWOMAN students experienced improvement from pre to post assessment, while only 16% experienced a pre/post decline.
- Among students who experienced decline, most self-reported at pre-assessment that their ability to focus was “excellent” or only “needed a little more work.” This decline is potentially attributable to an unrealistic pre-assessment perception, one that is more accurately reflected at post-assessment after the student has been exposed to the concept of focus.

Examining open-ended findings, it appears that students who experienced improvement in ability to focus had identified goals and were able to prioritize and multitask. Students who experienced declines self-reported that they were immature and unable to keep their minds from wandering. In line with these findings, activities that focus on promoting positive behaviors and mitigating non-successful behaviors could potentially be incorporated into AMAN/AWOMAN GUID-2 and GUID-3 courses in the future.

ATHLETICS

SLO: At the end of the basketball season, 75% of student-athletes in the Basketball Program will demonstrate positive gain on the four-point sense of social responsibility assessment rubric. AND

At the end of the basketball season, 75% of student-athletes in the Basketball Program will demonstrate positive gain on the four-point student independence assessment rubric.

SUMMARY: Relative to the learning outcomes assessment statements, it appears that, while some gain was note on learning outcome #1 (sense of social responsibility), the majority of student-athletes did not experience gain on this learning outcome. A similar finding was observed in regard to the second learning outcome (student independence); over 60% of student-athletes self-reported no change from the beginning to the end of the season. Furthermore, student-athletes were more likely to self-report a decline (28.6%) rather than a gain (9.5%) in independence.

Closing the Loop:
The goals articulated in the student learning outcomes assessment statements were not met. Student-athletes did not experience a 75% gain in either sense of social responsibility (38.1% experienced gain) or independence (9.5% experienced gain). However, additional analyses identified:

- Similarities between student-athletes and basketball team head coaches on student sense of social responsibility (pre- and post-assessment) and pre-assessment of student independence.
- Post-assessment of student independence revealed statistically significant differences between student-athletes and head coaches; student-athletes rated their end-of-season level of independence higher than the head basketball coaches.
- Over the course of the season, both student-athletes and head basketball coaches perceived a decline in student independence, although it appears that this is partially driven by a high pre-assessment rating by both groups.
- A statistically significant increase in student-athletes’ sense of social responsibility as perceived by both student-athletes and head basketball coaches. From the beginning to the end of the season, both student-athletes and the head basketball coaches perceived gain in student-athlete sense of social responsibility.

Cashier’s Office

SLO: Increase student understanding of policies governing the payment of fees and receipt of refunds.
SUMMARY: Overall, students demonstrated an understanding of the office’s policies; in fact, as illustrated in Table 2, 28 of the 33 students (85%) answered at least three of the five questions correctly. In addition, 73% of all responses were correct. However, students demonstrated less understanding with regards to question 3 (58% correct) and question 5 (42% correct). Therefore, students appear to be less likely to understand that there are time constraints on refund eligibility and that delinquent accounts can indeed be handled by the Franchise Tax Board.
Closing the Loop: Prepare instructional materials for students regarding time constraints on refund eligibility and that delinquent accounts can indeed be handled by the Franchise Tax Board.

Counseling

SLO: Students who see counselors will employ the appropriate technology.
SUMMARY: After meeting with a counselor, both students and counselors used a four-point rubric to assess student independence and ability to effectively use technology (Rubrics have been posted to the Z Drive at: ). In order to keep the learning outcomes assessment process manageable and non-intrusive, counselors were only required to assess the first student they met with each day. Since counselors’ schedules varied, this process created a built-in random sampling procedure. While mean responses of students and counselors appear to be similar, additional analyses were conducted to determine whether the median response of students and counselors were statistically significantly different. To determine whether differences exist, a Wilcoxon signed-ranks test was conducted to test the hypothesis that the medians are the same.
Closing the Loop:
In regard to the student learning outcome of ability to effectively use technology, faculty ratings were lower than student ratings 29.1% of the time, equal to student ratings 43.0% of the time, and higher than student ratings 27.9% of time. Based upon these ratings, statistically significant differences were not observed between counselors and students on their respective ratings of students’ ability to effectively use appropriate technology.

Disability Programs & Services

SLO: Students will be able to identify the accommodations associated with their disability.
SUMMARY: Working collaboratively throughout the Summer 2008 semester, the DPS Faculty and staff, with the support of Institutional Research, developed two questions where students were asked to identify their disability and the appropriate accommodations for that disability. As cited in the means of assessment statement, the survey was disseminated to students during the Fall 2008 semester. Equally important, the DPS Program also provided the Office of Institutional Research with a database that identifies DPS students and their disability in order to examine the first SLO. A limitation to this study was that only 106 Fall 2008 DPS students were assessed, which represents only about 12% of DPS students. In order to achieve a representative sample, approximately 300 students would have needed to complete the assessment. Only 3 out of 106 DPS students who were assessed correctly identified the appropriate accommodations associated with their disability. The students who correctly identified the appropriate accommodations were 3 of the 16 psychologically impaired DPS students. In addition, 80% of the DPS students who were mobility impaired identified half or more of the correct accommodations. Conversely, 67% of DPS students with a speech or language impairment did not identify any accommodations correctly. Moreover, DPS students with a brain injury were also less likely to identify accommodations correctly.
Closing the Loop: Provide training materials and training opportunities for students in regards to accommodations associated with their disability.
Extended Opportunities Programs & Services

SLO: Students engaged in the EOPS program will experience in increase in their sense of well being and their self-esteem.

SUMMARY: Working collaboratively throughout the Summer and Fall 2008 semester, the Student Activities staff, with the support of Institutional Research, developed a 12 item multiple choice assessment tool to measure student understanding of the transfer process. The assessment tool was integrated into several information sessions during the Fall 2008 semester by asking students to complete it before and after the session. Assessment scores at both time points were obtained for a total of 50 students. Students generally demonstrated an increased understanding across all question items. For instance, students demonstrated an increased understanding of self-esteem among surveyed EOPS students. Thus, while the additional academic support services offered by EOPS improve student success, they also seemingly have a positive impact on students’ perceived sense of well-being.

Closing the Loop: Provide training materials and training opportunities for EOPS students in regards to their sense of well being and self-esteem. Explore materials for the HOPE/Mindset program.

Financial Aid

SLO: Increase student understanding of the financial aid application process.

SUMMARY: Overall, findings indicate that the workshops were effective at increasing student knowledge of the financial aid process. Nevertheless, student learning was not found to be related with the timely submission of the FAFSA application.

Closing the Loop: It is clear that the workshop is helping students acquire the knowledge necessary to successfully apply for financial aid. However, findings also indicate that students are not retaining all of the necessary information pertaining to obtaining a pin number or the verification process. One approach to addressing this matter is for future financial aid workshops to devote an increased amount of time to conveying such information.

Health Services

SLO: Students will be proactive about their physical and mental health, accessing Student Health Services and community agencies to improve health.

SUMMARY: Students were pre-assessed regarding their feelings as to whether they engage in behaviors that prevent them from getting sick and that when they do get sick they take steps to get healthy (3 or 4 points on the rubric). The results indicated that 49% of the students rated themselves as accountable. However, the post-assessment indicates that students were much less likely to self-rate themselves as being accountable about their own health. For instance, 49% of the students self-rated themselves as being responsible for their own health and that they seek help when they are sick; whereas, 36% of students self-rated themselves as accountable on the post-assessment. Examining the results further, the data indicate that students who self-rated themselves as a 1 on the pre-assessment were more likely to self-rate themselves higher on the post-assessment. Moreover, students who self-rated themselves as a 4 on the pre-assessment were more likely to self-rate themselves lower on the post-assessment.

Closing the Loop: Provide training materials and training opportunities for students in regards to proactive behavior and responsibility for their health.

Student Activities

SLO: Increase awareness among students and Faculty attending the Inter-Club Counsel orientation of how to successfully conduct and organize extra-curricular events at Chaffey College.

SUMMARY: Working collaboratively throughout the Summer and Fall 2008 semester, the Student Activities staff, with the support of Institutional Research, developed 10 true and false pre-post assessment questions measuring awareness of how to successfully conduct and organize extracurricular events at Chaffey College. As cited in the means of assessment statement, the survey was disseminated to students during the Fall 2008 semester during the Inter-Club Counsel orientation. The criterion for success stated that 30% of the respondents would answer all of the questions correctly. Referring to Table 1, we see that 19 or 33% of the respondents answered the questions correctly.

Closing the Loop: Provide training materials and training opportunities for students in regards to the procedure for successfully conducting and organizing extra-curricular events at Chaffey College.

Transfer Center

SLO: Students will understanding the transfer process.

SUMMARY: Members of the Transfer Center staff visit classrooms throughout the semester to offer students a brief information session on the transfer process. In an effort to examine student learning stemming from such information sessions, the Transfer Center developed a 12 item multiple choice assessment tool to measure student understanding of the transfer process. The assessment tool was integrated into several information sessions during the Fall 2008 semester by asking students to complete it before and after the session. Assessment scores at both time points were obtained for a total of 50 students. Students generally demonstrated an increased understanding across all question items. For instance, students demonstrated an increased awareness that ‘hands-on’ majors were more likely offered by CSU campuses rather than by...
UC or private campuses (d = .66). In addition, they demonstrated an increased understanding of the ‘Golden Four’ (d = .65). On the other hand, there were 6 items for which students did not demonstrate a meaningful increase in understanding, or for which students demonstrated a decrease in understanding at post-test (Q1, Q3, Q6, Q8, Q11, Q12). For instance, students were less likely to understand the term ‘transfer’ in the context of an educational plan (d = -.67), and were less likely to correctly identify the purpose of the Transfer Center (d = -.40).

**Closing the Loop:** Provide training materials and training opportunities for students in regards to the transfer process.

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**Veteran’s Center**

**SLO:** Returning veterans who enroll at Chaffey College for courses will increase their awareness of college services geared towards enhancing their success.

**SUMMARY:** yet to be assessed. New Program.

**Closing the Loop:**

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**School of Instructional Support**

**Curriculum**

**SLO:** The Curriculum Office will effectively integrate the Institutional Core Competencies, and the Chaffey College SLO philosophy, into the standard Course Outline of Record process.

**Summary:** The table below displays the findings stemming from the assessment of faculty members’ perceptions at the beginning (i.e., pre-test) and end (i.e., post-test) of the fall 2009 semester. Pre and post-test differences were examined via an effect size d (educational researchers typically consider effect sizes of d .25 or larger as indicative of meaningful or practically significant differences). It is apparent that ratings increased significantly from pre to post assessment; this is evidenced by the overall increase from pre to post assessment (d = .50), and by the observed increases among items 1 (d = .42) and 4 (d = .62). On the other hand, there was no meaningful increase with regards to the perceived awareness of the Core Competencies (d = .02). Thus, it is clear that the criterion for success has been met, and that the Curriculum Office meets its stated goal of effectively integrating SLOs and Core Competencies into the Course Outline of Record process.

**Closing the Loop:** The Curriculum Chair and the Outcomes and Assessment Committee Chairs will continue to insert “learning opportunities” whenever appropriate, to continue to dialogue regarding SLOs, Core Competencies and faculty buy-in. the next level of SLO training for curriculum committee members, and faculty at large, should pertain to the quality of the feedback in Box #13 — “closing the loop” — no more “satisfied with results” types of statements!

**Library**

**SLO:** Student utilizes information resources to facilitate research.

**Summary:** One of the major projects undertaken during the last academic year was creation of preliminary collection development policies and some rubrics for selection and deselection of specific resource types. Several discussions took place at Library faculty and staff meetings raising concerns about the current state of collection management. The former faculty point for collection development moved exclusively to our Fontana site in fall 2011 and collection management duties such as donations and audio-visual were reassigned during spring 2011. A suggestion was made at one of the Library faculty meetings in early fall 2011 that it might be beneficial to move to a liaison-based collection management model where library faculty would be assigned collections responsibility divided by instructional department (English, Music, etc.).

**Closing the Loop:** After discussion, library faculty decided to move to the liaison model. The library coordinator in consultation with the full-time faculty put together a list of who would be responsible for which areas, divided mainly along school lines. The list was distributed for discussion and approval at a library faculty meeting in late fall. This decision coincided with an announcement from the Chancellor’s Office that the state had come to a three-year minimum agreement with the EBSCO publishing company to pay for a basic database package for all California Community Colleges, freeing up monies to expand our local subscriptions to databases. We then decided to perform a preliminary scan of library collections of each of our assigned liaison areas, to be completed mid-March of 2012. Results of the scan were made available on our Library Moodle Community and this data in part was used to frame the discussion and determine which new databases to target for subscription in a March 2012 meeting of the library faculty and Dean of Instructional Support.
**APPENDIX C - Did You Know?**

**Research Briefs from Institutional Research**

*Examine Student Learning In Transfer Center Information Sessions*

**Outcomes Statement:** Increase student understanding of the transfer process.

**Means of Assessment:** Members of the Transfer Center staff visit classrooms throughout the semester to offer students a brief information session on the transfer process. In an effort to examine student learning stemming from such information sessions, the Transfer Center developed a 12 item multiple choice assessment tool to measure student understanding of the transfer process. The assessment tool was integrated into several information sessions during the Fall 2008 semester by asking students to complete it before and after the session. Assessment scores at both time points were obtained for a total of 50 students.

**Criterion for Success:** Students will demonstrate an overall improvement in their understanding of the transfer process at post-test.

**Summary of Evidence:** Table 1 illustrates student performance on the assessment tool before (i.e., pre-test) and after (i.e., post-test) the information session. The first 12 rows ('Q1' - 'Q12') indicate the number of correct responses for each question item; the last row, however, reflects the average number of correct responses. We examined pre and post-test differences via an effect size, a measure of the extent to which observed differences are practically significant (educational researchers typically consider effect sizes of .25 or larger as indicative of meaningful or practically significant differences). Based upon such criteria, it is clear that students demonstrated an overall improvement in their understanding of the transfer process at post-test ($d = .26$). Students generally demonstrated an increased understanding across all question items. For instance, students demonstrated an increased awareness that 'hands-on' majors were more likely offered by CSU campuses rather than by UC or private campuses ($d = .66$). In addition, they demonstrated an increased understanding of the 'Golden Four' ($d = .65$). On the other hand, there were 6 items for which students did not demonstrate a meaningful increase in understanding, or for which students demonstrated a decrease in understanding at post-test (Q1, Q3, Q6, Q8, Q11, Q12). For instance, students were less likely to understand the term 'transfer' in the context of an educational plan ($d = -.67$), and were less likely to correctly identify the purpose of the Transfer Center ($d = -.40$).

<table>
<thead>
<tr>
<th>Question Item</th>
<th>Number Correct Pre-Test</th>
<th>Number Correct Post-Test</th>
<th>Effect Size ($d$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 - Ed Plan</td>
<td>48</td>
<td>37</td>
<td>.67</td>
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<tr>
<td>Q2 - Upper/Lower Transfer</td>
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<td>33</td>
<td>.45</td>
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<tr>
<td>Q3 - IGETC</td>
<td>14</td>
<td>15</td>
<td>.04</td>
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<tr>
<td>Q4 - Golden Four</td>
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<td>34</td>
<td>.65</td>
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<td>Q5 - Application Submission</td>
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<td>Q6 - CSU/UC Transfer</td>
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<td>Q8 - Primary Purpose</td>
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<td>Q9 - Academic Planning</td>
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<td>14</td>
<td>.62</td>
</tr>
<tr>
<td>Q10 - Applied Majors</td>
<td>14</td>
<td>30</td>
<td>.66</td>
</tr>
<tr>
<td>Q11 - Faith Based Campuses</td>
<td>37</td>
<td>35</td>
<td>-.09</td>
</tr>
<tr>
<td>Q12 - Transfer Center Location</td>
<td>32</td>
<td>32</td>
<td>.00</td>
</tr>
<tr>
<td>Overall (Avg.)</td>
<td>6.32</td>
<td>7.42</td>
<td>.26</td>
</tr>
</tbody>
</table>
APPENDIX D

CHAFFEY College Core Values

Core Values

STUDENT SUCCESS
Chaffey College fosters a climate of inquiry, promotes evidence-based decision making, and provides access to essential learning support.

EDUCATIONAL EXCELLENCE
Chaffey College supports a spirit of innovation and excellence in teaching and learning as reflected in the core competencies.

CLIMATE OF INCLUSION AND RESPECT
Chaffey College honors representative voices and collaboration in a respectful and professional learning environment.

DYNAMIC STUDENT SERVICES
Chaffey College integrates comprehensive support services into a seamless, accessible, and sensitive network.

RESPONSIVENESS TO THE COMMUNITY
Chaffey College develops community partnerships, unique learning opportunities, and outreach programs to meet the needs of the community.

ENVIRONMENTAL RESPONSIBILITY
Chaffey College commits to the preservation, conservation, and responsible use of its resources.
APPENDIX E

Chaffey College Faculty Values: PRIDE
The faculty of Chaffey College . . .

P
Participate in
- shared governance, department, and college-wide activities
- fostering and exercising academic freedom
- sharing pedagogical ideas
- the community of learning
- ongoing professional development on and off-campus
- scholarly or creative pursuits

R
Respect
- students, staff, administrators, and faculty in all disciplines and areas of the college
- the dignity and diversity of all students
- the capacity of all students to learn, grow, and succeed
- confidentiality
- academic freedom and academic integrity
- the unique expertise of each discipline
- the social and physical environment of the college, community, and world

I
Inspire
- students to succeed and reach their goals (transfer, career, certificate, professional)
- students to have high academic and professional aspirations
- students to utilize campus resources effectively
- students to explore new, ideas, concepts, beliefs, and their place in the world
- active learning, critical thinking, and cross-curricular connections
- academic freedom and academic integrity
- other faculty to excellence and creativity

D
Develop
- empathy
- a culture of success and academic rigor
- a safe, learning-centered environment
- the whole student
- high expectations for students and themselves
- the capabilities of all students
- support services, pedagogy, and curricula to meet all students’ changing needs and interests

E
Engage in
- high-hope and growth-mindset thinking
- sharing ideas and means to improve teaching and learning
- innovative approaches to teaching, addressing multiple learning modalities
- lifelong learning
- professional growth and improvement
- finding creative solutions to curricular, instructional, relational, and institutional issues
APPENDIX F Chaffey College Faculty Ethics Statement

CHAFFEY COLLEGE FACULTY ETHICS STATEMENT

I. Statement of Purpose: The purpose of this Chaffey College Faculty Ethics Statement is to provide guidelines for faculty with regard to their disciplines, students, colleagues, institutions, and communities.

II. Discipline
• Maintain subject matter proficiency.
• Cultivate the intellectual virtues of being open-minded, fair, honest, and thorough.
• Improve teaching methods.

III. Students
• Value students as individuals.
• Serve as intellectual guide and advisor.
• Foster honest academic conduct.
• Avoid exploitation, harassment, and discriminatory treatment.
• Respect confidentiality.
• Protect and advance academic freedom.
• Promote cultural and gender sensitivity.
• Encourage the free pursuit of learning.
• Cultivate a learning environment of trust and sensitivity.
• Foster life-long critical thinking.

IV. Colleagues
• Promote fairness and collegiality.
• Avoid exploitation, harassment, and discriminatory treatment.
• Respect confidentiality.
• Protect and advance academic freedom.
• Accept responsibility for the shared governance of Chaffey College.

V. Institution
• Promote faculty excellence.
• Advance honest academic conduct.
• Establish academic standards.
• Maintain academic freedom.
• Uphold contractual responsibilities.
• Accept responsibility for institutional communication.

VI. Community
• Acknowledge and balance duties as both private citizens and members of this institution.
• Model and promote conditions of free inquiry.
• Promote unrestricted access to community college instruction.
## APPENDIX G  Chronological Assessment Plan Example

### CHRONOLOGICAL ASSESSMENT PLAN: Biology

**Completed by:** Angela Burk-Herrick  
**DATE CREATED:** Updated 1/11/2013

<table>
<thead>
<tr>
<th>Fall 2011</th>
<th>SLO STATE</th>
<th>Assessment Type</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 61</td>
<td>OUTCOME STATEMENT 1.1: Students will demonstrate skills in scientific thinking, scientific communication, independent problem solving and experimental methodology using examples from cellular and molecular biology. WHO WILL BE COLLECTING EVIDENCE: Emily, Angela, Robin</td>
<td>Embedded</td>
<td>Biology 1, Biology 2</td>
</tr>
<tr>
<td>Biology 63</td>
<td>OUTCOME STATEMENT 1. Students will further develop their skills in scientific thinking, scientific communication, problem solving and experimental methodology applied to the study of field and evolutionary ecology. WHO WILL BE COLLECTING EVIDENCE: Emily, Angela, Robin</td>
<td>Embedded</td>
<td>Biology 3</td>
</tr>
<tr>
<td>Biology 62</td>
<td>OUTCOME STATEMENT 2: Students will demonstrate skills in the use and interpretation of scientific literature relevant to cell and molecular biology. WHO WILL BE COLLECTING EVIDENCE: Emily, Angela, Robin</td>
<td>Embedded</td>
<td>Biology 5, Biology 10</td>
</tr>
<tr>
<td>Biology 63</td>
<td>OUTCOME STATEMENT 3: Students will continue to develop their skills in the use of the scientific literature used in field and evolutionary ecology. WHO WILL BE COLLECTING EVIDENCE: Emily, Angela, Robin</td>
<td>Embedded</td>
<td>Biology 11, Biology 12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall 2012</th>
<th>SLO STATE</th>
<th>Assessment Type</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 90</td>
<td>OUTCOME STATEMENTS: All WHO WILL BE COLLECT EVIDENCE: Nikki, Rosie, Sandra</td>
<td>Test</td>
<td>Biology 92-A-h, Biology 98 A,B,C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Every 2 yrs</th>
<th>PreAllied Health Strand: Fall 2011, 2013, 2015, 2017</th>
<th>SLO STATE</th>
<th>Assessment Type</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 20</td>
<td>OUTCOME STATEMENTS 1. Students will acquire an understanding of how structure determines function. 2. Students will recognize the hierarchical nature of levels of organization in the human body 3. Students will be able to use common anatomical terms and apply their meaning. WHO WILL BE COLLECT EVIDENCE: Nikki, Rosie, Sandra</td>
<td>Test</td>
<td>Biology 14</td>
<td></td>
</tr>
<tr>
<td>Biology 22</td>
<td>OUTCOME STATEMENTS 1: Students will be able to analyze processes and functional interactions of cells. 2. Students will be able to analyze processes and functional interactions of organ systems. 3. Students will be able to acquire, analyze, and interpret lab data. WHO WILL BE COLLECT EVIDENCE: Nikki, Rosie, Sandra</td>
<td>Test</td>
<td>Biology 16, Biology 20</td>
<td></td>
</tr>
<tr>
<td>Biology 23</td>
<td>OUTCOME STATEMENTS 1: Students will develop skills in the taxonomic organization of microorganisms. 2. Students will acquire a mechanistic understanding of human infectious diseases. 3. Students will understand human infectious microorganisms in the broader context of ecology and evolution. WHO WILL BE COLLECT EVIDENCE: Nikki, Rosie, Sandra</td>
<td>Test</td>
<td>Biology 22, Biology 23</td>
<td></td>
</tr>
<tr>
<td>Biology 23L</td>
<td>OUTCOME STATEMENTS 1: Students will successfully demonstrate correct use of microscopes. 2. Students will acquire and use diagnostic skill and tests to solve problems related to the culture and identification of microorganisms. 3. Students will understand the etiologic agents of infectious disease in the broader context of ecology and evolution. WHO WILL BE COLLECT EVIDENCE: Nikki, Rosie, Sandra</td>
<td>Test</td>
<td>Biology 61, Biology 62</td>
<td></td>
</tr>
<tr>
<td>Biology 424</td>
<td>OUTCOME STATEMENTS 1: Students will achieve basic level of comprehension of human biology. 2. Students will acquire a mechanistic understanding of human physiology. 3. Students will apply skills in problem solving to human anatomy and physiology. WHO WILL BE COLLECT EVIDENCE: Nikki, Rosie, Sandra</td>
<td>Test</td>
<td>Biology 63, Biology 90</td>
<td></td>
</tr>
<tr>
<td>Biology 424L</td>
<td>OUTCOME STATEMENTS 1: Students will use laboratory procedures, models, and/or exercises to identify and understand structure-function relationships. 2. Students will investigate and apply specific examples of physiological processes. WHO WILL BE COLLECT EVIDENCE: Nikki, Rosie, Sandra</td>
<td>Test</td>
<td>Biology 92-A-h, Biology 98 A,B,C</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX H Core Competency Matrix Example

Program Name: _____________ Biology ________________________________

Semester: __________ Fall 2012 ______________________________________

Program Coordinator: ____________ RoseAnn Cobos ______________________

Directions:
Column 1. Write one SLO in each row (samples on page 2). For most programs, 3-6 SLOs are recommended.
Column 2. Write your assessment method(s).
Column 3. Using the list of Core Competencies on pages 3 & 4, list the Core Competency or Core Competencies addressed by each SLO in each row.

<table>
<thead>
<tr>
<th>Student Learning Outcome</th>
<th>Assessment Method(s)</th>
<th>Core Competency (or Competencies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will demonstrate skills in scientific thinking, scientific communication, independent problem solving and experimental methodology.</td>
<td>Embedded Assessments</td>
<td>Communication &amp; Critical Thinking and Information Competency</td>
</tr>
<tr>
<td>Students will be able to discuss current scientific hypotheses on the (evolutionary) origins of organismal diversity.</td>
<td>Embedded Assessments</td>
<td>Critical Thinking and Information Competency</td>
</tr>
<tr>
<td>Students will apply evolutionary theory and structure-function relationships, relative to interactions between biological entities and their environments, as unifying ideas across all levels of biological organization.</td>
<td>Embedded Assessments</td>
<td>Critical Thinking and Information Competency</td>
</tr>
</tbody>
</table>
# APPENDIX I  Curriculum Map Example

## Chaffey College Program Level SLO Curriculum Mapping Grid

**Program Name:** Biology  
**Name of Primary Writer:** Angela Bark-Herrick  
**Date Completed:** April 11, 2011

**General Education Biology**

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO1: Distinguish questions that can be addressed scientifically</th>
<th>SLO4: Recognize unifying theories in evolutionary context</th>
<th>SLO5: Comprehend current events related to biology</th>
<th>SLO7: Experience excitement of science, be motivated to continue learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 1</td>
<td>P</td>
<td>I</td>
<td>IP</td>
<td>P</td>
</tr>
<tr>
<td>Biology 2</td>
<td>P</td>
<td>I</td>
<td>IP</td>
<td>P</td>
</tr>
<tr>
<td>Biology 3</td>
<td>P</td>
<td>IP</td>
<td>IP</td>
<td>P</td>
</tr>
<tr>
<td>Biology 4</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 5</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 6</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 7</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 8</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 9</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 10</td>
<td>IP</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 11</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 12</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 13</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 14</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 15</td>
<td>P</td>
<td>IP</td>
<td>P</td>
<td>P</td>
</tr>
</tbody>
</table>

L: Program student learning outcome is INTRODUCED in the course.  
P: This program student learning outcome is PRACTICED in this course.  
M: This program student learning outcome is MASTERED in this course.

**Pre ALLied Health Pre-Professional**

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO1: Achieve level of comprehension of human biology, health and disease.</th>
<th>SLO2: Acquire a mechanistic understanding of biological processes</th>
<th>SLO3: Acquire skills in scientific method and problem solving</th>
<th>SLO4: Understand human biology in the context of ecology and evolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 20</td>
<td>P</td>
<td>IP</td>
<td>IP</td>
<td>IP</td>
</tr>
<tr>
<td>Biology 21</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 22</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 23</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Biology 24</td>
<td>P</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>Biology 25</td>
<td>P</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>Biology 26</td>
<td>P</td>
<td>IP</td>
<td>IP</td>
<td>IP</td>
</tr>
</tbody>
</table>

L: Program student learning outcome is INTRODUCED in the course.  
P: This program student learning outcome is PRACTICED in this course.
### Outcome Statements
- Few of the program's outcome statements contain Audience, Behavior, and Condition elements. There is some confusion between learning outcomes and achievement; no description of specific knowledge, skills, or abilities (KSA) that students should acquire as a result of participating in the program.
- A majority of the program's outcome statements contain Audience, Behavior (KSA) and Condition elements. A majority of the outcomes are judged to be measurable KSAs. Some of the outcomes in question are not easily measured.
- All the program's outcome statements contain Audience, Behavior (KSA) and Condition elements. All of the outcomes are judged to be measurable KSAs. The outcomes represent the collaborative thinking of the program's faculty/staff and reflect program goals.

### Means of Assessment
- The program's SLO lacks an identifiable means of assessment tool.
- The assessment instruments are judged to be an adequate measure of the proposed outcomes, but the proposed assessment plan lacks essential components (who, what, where, when). The means of assessment have yet to be formally implemented or there are implementation flaws.
- The assessment plan addresses all essential components (who, what, where, when). The assessment instruments are currently being implemented and are free of implementation flaws. The means of assessment represent the collaborative thinking of the program's faculty/staff.

### Criteria for Assessment
- Few of the program's SLOs have descriptions of benchmarks or criterion for success.
- Criteria for success offered for most of the program's SLO, but are lacking in specificity (e.g., performance will be greater at post-test).
- Well-defined criteria for success (e.g., there will be a 60% increase in scores from pre to post-test) for all program SLOs. The proposed criteria for success represent the collaborative thinking of the program's faculty/staff.

### Summary of Evidence
- No evidence or findings offered, though there is a plan for evidence gathering.
- A sufficient amount of evidence has been gathered, but the evidence has yet to be formally analyzed.
- A formal summary of evidence is generated and disseminated among all program faculty/staff.

### Use of Results for Planning
- The program may have a formal summary of evidence stemming from SLO implementation, but there has been no dialogue among faculty/staff regarding findings.
- The program has a formal summary of evidence stemming from SLO implementation and there has been dialogue among faculty/staff that has led to the development of strategies for making use of the results for planning.
- The program has implemented the proposed strategies for making use of the results.

### Overall Program Level Implementation of SLOs
- There is preliminary, investigative dialog about SLOs. There is recognition of existing practices such as courses objectives and how they relate to SLOs. The program has discussed how to define SLOs in their discipline.
- The program has established a framework for defining SLOs (where to start), how to extend and timeline. The program has establish authentic assessment strategies for assessing SLOs. Program faculty are engaged in SLO development.
- SLOs and authentic assessment are in place for the programs SLOs. Results of assessment are being used for improvement. There is widespread dialogue in the program about the results. Decision-making includes dialogue on the results of assessment and is purposefully directed toward improving student learning. Comprehensive SLO reports exist and are completed on a regular basis.
APPENDIX K PSR SLO Feedback Letter

Greetings

The Outcomes and Assessment Committee reviewed your PSR-SLO page and your program has been assessed to be at the following level for implementation of Student Learning Outcomes:

**Overall Program Level Implementation of SLOs is Awareness**: There is preliminary, investigative dialog about SLOs. There is recognition of existing practices such as courses objectives and how they relate to SLOs. The program has discussed how to define SLOs in their discipline.

**Overall Program Level Implementation of SLOs is Developmental**: The program has established a framework for defining SLOs (where to start), how to extend and timeline. The program has established authentic assessment strategies for assessing SLOs. Program faculty members are engaged in SLO development.

**Overall Program Level Implementation of SLOs is Proficiency**: SLOs and authentic assessment are in place for the programs SLOs. Results of assessment are being used for improvement. There is widespread dialogue in the program about the results. Decision-making includes dialogue on the results of assessment and is purposefully directed toward improving student learning. Comprehensive SLO reports exist and are completed on a regular basis.

The following suggestions have been made:

As a result of your **Proficiency assessment**, please continue on with implementing your assessment plan, “Closing Loops and documenting your assessments.

Please attach (we will add a check mark to the missing document(s)): Chronological Assessment Plan
Curriculum Map
Core Competencies Matrix

Please align your assessment dates in Curricunet to match the dates on your chronological assessment plan

Please enter assessment evidence into Box 4 – “Summary of Evidence” in Curricunet

Please “close the loop” by entering in changes you have made since reviewing your assessment evidence in Box 5 – “Use of Evidence” in Curricunet

In the answer to your first SLO question: **Discuss how the number, type, depth, and breadth of the courses support program SLO’s**, please discuss your courses in terms of how do the Is relate to the Ps and how the Ps relate to the Ms in your course sequencing; list prerequisite requirements/preparation; discuss the logic of the course sequencing; speaking to the core requirements versus the elective requirements.

In the answer to your second SLO question: **Discuss how courses in the program articulate with or complement each other, please** discuss your courses in terms of how do the Is relate to the Ps and how the Ps relate to the Ms in your course sequencing; list prerequisite requirements/preparation; discuss the logic of the course sequencing; speaking to the core requirements versus the elective requirements.

For the purposes of this year’s PSR SLO review, question # three was not considered.

In the answer to your fourth SLO question: **How and when has your program reviewed or revised program SLO’s to align with core competencies and course SLO’s?**, please discuss your chronological assessment plan. State what has been assessed and what will be assessed in the future. Describes the goals(s) of each planned assessment projects. Re-cap department meetings, department/school FLEX meetings where SLO materials has been discussed or revised. Include dates! – Go back to 2009If you do not have a chronological assessment plan (CAP) – develop one now, keeping these suggestions in mind: 1. Anticipates how the results will be used for improvement and decision making; 2. The CAP should be collaboratively created with input and discussion by the entire ; 3. The CAP should be ongoing rather than periodic; 4. The CAP is systematic; 5. The CAP is manageable; 6. Over time, multiple data-collection methods are used and listed on the CAP; Please remember that the SLO process needs to be conveyed to students and the students understand their role in assessment.
In the answer to your fifth SLO question: **What program or course changes have been made based on the result of the assessed outcome?**, please talk about closing loops! Discuss how your program used your results to change or improve your program or courses. “Closing the Loop” might show that a program does not need to make any changes to the way they are currently doing things. However, if the evidence shows that changes are needed here are some suggestions for you to consider:

1. Changing Pedagogy;
2. Improving the means of assessment used;
3. Changing the means of assessment used;
4. Reevaluating the criteria for success that was established;
5. Modifying curriculum;
6. Improving student support;
7. Improving faculty support;
8. Requesting equipment, supplies or other resources.

Remember there is a list of actions that can be considered for “closing loops” on the help screen: 📝 for this question.

In the answer to your sixth question: **Show how course SLO evidence supports your program SLO’s**, please discuss how evidence that has been collected at the course level has been used to assess and support your program SLOs. This question is very similar to question 1 and 2, but asks the program to show how course level assessment is being used to assess your program level SLOs.

**Other Comments and Suggestions:**
APPENDIX L Glossary of SLO Terms

**Accommodations**: Modification 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.

**Affective Domain**: Skills in the affective domain describe the way people react emotionally and their ability to feel another living thing's pain or joy. Affective objectives typically target the awareness and growth in attitudes, emotion, and feelings.

**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 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.

**Administrative Unit Outcomes (AUOs)**: Outcome statements used to identify and measure non-instructional services (Maintenance and Operations, Campus Police, Human Resources, etc.) that a unit, office, program or division provides which supports student learning.

- **Example**: The Business Office will produce timely reports and information accurately communicating the fiscal status of the institution for use by administrator, faculty and staff.

**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.

**Assessment Plan**: A planning document outlining the college’s assessment procedures for each component of the college.

**Assessment of Student Learning Outcomes**: The systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development. (Source: Assessment Essentials, Palomba & Banta)
**Assessment Analysis Report:** for departments in Instruction, Student Services and the Library, a reporting document containing an analysis of departmental SLO assessment activities and recommendations for improvement. These are submitted as part of each area’s Instructional Plan or departmental review to the Council for Instructional Planning or the Student Services Manager’s Team. After scrutiny by those groups, the reports are forwarded to the College SLO Assessment Review Committee. Administrative Services departments, which indirectly aid instruction, embed their assessment reports in their departmental reviews. These are also forwarded to the SLO Assessment Review Committee after scrutiny by manager teams.

**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 student to actively demonstrate what they know rather than recognize or recall answers to questions.

**Baseline:** A staring point or point in time from which to compare and measure selected changes in the course, program or institution. A baseline always invites a comparison.

**Basic Skill:** below college-level reading, writing, ESL, 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 of 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. Benchmarks can be interim outcome measures.

**Bloom’s Taxonomy:** Bloom’s taxonomy of learning objectives is used to define how well a skill or competency is learned or mastered. The activity associated with each level is given below.

1. At **Knowledge Level of Learning**, a student can define terms.
2. At **Comprehension Level of Learning**, a student can work assigned problems and can example what they did.
3. At **Application Level of Learning**, a student recognizes what methods to used and then used the methods to solve problems.
4. At **Analysis Level of Learning**, a student can explain why the solution process works.
5. At **Synthesis Level of Learning**, a student can combine the part of a process in new and useful ways
6. At **Evaluation Level of Learning** a student can create a variety of ways to solve the problem and then, based on established criteria, select the solution method best suited for the problem.

**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 rabid, informative feedback to improve classroom dynamics by monitoring learning, from the students’ 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 emails the collection of data aimed at measuring successful learning in the individual course and improving instruction with a goal to improving learning.

**Cognitive Domain:** Skills in the **cognitive domain** revolve around knowledge, comprehension, and "thinking through" a particular topic. Traditional education tends to emphasize the skills in this domain, particularly the lower-order objectives.

**Communication:** “Meaningful Communication uses subject, audience, and purpose to influence, inform, and/or connect with others. This could include, but is not limited to, organizational structures, appropriate support, and various delivery methods.”

**Community/Global Awareness and Responsibility:** Learners recognize and analyze the interconnectedness of global, national, and local concerns, analyzing cultural, political, social and environmental issues from multiple perspectives; they recognize the interdependence of the global environment and humanity.

**Core Competencies:** these college-wide skills describe what students are able to do at the end of General Education curriculum or when receiving an AA or AS degree. Chaffey’s core competencies are: 1) Communication, 2) Critical Thinking and Information Competency, 3) Global Awareness and 4) Personal Responsibility and Professional Development.

**Course Objectives:** statements that tell students what supporting skills, knowledge, and attitudes they will learn during a course that lead to mastery of the course SLOs. They are usually discrete skills that require lower level thinking skills and form the building blocks to course SLOs.

**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.

**Critical Thinking:** Learners use the intentional application of rational higher order thinking skills, such as analysis, synthesis, problem recognition and problem solving.

**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 department, program, or institutional assessment information.

**Ends Policies:** Are institutional goals that support the mission of the college. These End Policies have been approved by the Chaffey College Governing Board and cover the broad areas of the learning environment, accountability and institutional effectiveness, infrastructure, human resource planning, fiscal management and the Chaffey College Core Competencies.
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.

Goal: Established ideas and direction with which to implement and accomplish the mission of the organization or institution and the intent to achieve a desired result or outcome.

Information Competency: Learners demonstrate the ability to state a research question, problem, or issue, determine information requirements in various disciplines for the research questions, problems or issue, use information technology tools to locate and retrieve relevant information, communicate using a variety of information technologies, understand the ethical and legal issues surrounding information and information technologies, and apply the skills gained in information competency to enable lifelong learning.

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.

Indicator: Specific items of information to track or monitor success on accomplishing an outcome. Indicators are numerical measure characterizing the results or impact of a program activity, service or intervention and are used to measure performance.

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.

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.

Means of Assessment: Means of 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. Components of Means of Assessment include: the type of assessment tool, the population being assessed, where and when the assessment will take place and a criteria for assessment.

- Example: 70% of selected students will be able to demonstrate knowledge of essay structure on the English 1A common final.

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.
**Mission:** The purpose of an organization or institution, why it was created, who its clients are and what it intends to do and accomplish.

**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.

**Objective:** General intent or purpose of the program broken down into measurable components.

**Outcome:** Knowledge, skills, and abilities that a student has attained at the end (or as a result) of his or her engagement in a particular set of collegiate experiences. WASC

**Outcomes or Results:** Positive benefits and behaviors accruing to individuals, families and communities that result from a program or service intervention. A result achieved and a change in condition, functioning or problem of an individual, group or community. Outcomes are always measurable. Outcomes can be positive, neutral or negative.

**Outcome Statement:** “Statements describing what students should know, understand, and be able to do with their knowledge when they complete courses, degrees, certificates, or enter employment, or transfer to other higher education institutions or programs” (Huba and Freed, 9).

An Outcome Statement must contain have these three components: Audience, Behavior and Condition.

- **Example:** By successfully completing CHEM 111 (Grade of ‘C’ or higher); students will demonstrate the ability to analyze sample laboratory data.

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

**Personal, Academic and Career Development:** Learners demonstrate an understanding of the consequences, both positive and negative, of their own actions; set personal, academic and career goals; and seek and utilize the appropriate resources to reach such goals.

**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 work.
**Program:** A program is defined as a set of courses that lead to degrees or certificates OR services that support student learning.

**Program Goals:** Are **broad statements** that describe the overarching long-range intended outcomes of a program, and are primarily used for **general planning** and are used as the **starting point** to the development and refinement of outcome statements. Program goals are usually **not measurable** and need to be further developed as separate distinguishable outcomes.

- **Example:** Help students clarify and implement individual educational plans which are consistent with their skills, interests, and values.

**Program and Services Review (PSR):** 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.

**Proxy measures:** Surrogate or stand-in measures for the actual outcome. Proxies are assumed to be highly correlated with the outcome of interest, so that a trend in a proxy is likely to correspond to the trend that would be observed if the actual outcome could be measured.

**Psychomotor Domain:** Skills in the **psychomotor domain** describe the ability to physically manipulate a tool or instrument like a hand or a hammer. Psychomotor objectives usually focus on change and/or development in behavior and/or skills.

**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.

**Service or Activity:** a key service area that typically consumes a significant portion of the budget or is critical to the success of the institution’s mission.
**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.

- **Example:** By successfully completing CHEM 111 (Grade of ‘C’ or higher); students will demonstrate the ability to analyze sample laboratory data.

**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.

**Vision:** A description of what the organization, or institution could look like or achieve at some time in the future.

**Wurtz Wheel:** Is a tool developed by the Chaffey College Institutional Research Department to help understand and track student learning outcomes, and visualize the SLO Assessment Cycle. The Wurtz Wheel was adapted from the Nichols Five Column model, the SLO Diagram provides a visual representation of each of the five steps involved in the SLO Assessment Cycle, and can be used to assess SLOs or Administrative Unit Outcomes (AUs) at the course, program, or institutional level.

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/assessmentthanda

ndbook.pdf