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Student Learning Outcome Assessment Handbook

Introduction

Mission

Cerro Coso Community College is committed to the ongoing assessment of student learning in academic programs and through student services through a systematic, college-wide assessment plan. The results of assessment provide clear evidence of student learning and are used to make further improvement to instruction and services.

Definition

Student learning outcome assessment is an activity in which institutional and instructional effectiveness is certified by evidence of student learning. Specific measurable learning behaviors are identified and assessed, and the results of the assessment are used to improve programs, courses, and services. Assessment, in this context, is not an evaluation of individual students or faculty.

There are several other concepts implicit to assessment:

- Its primary purpose is to improve student learning at Cerro Coso.
- It is a faculty-driven, collaborative process
- It is a process that is on-going and cyclical
- It does not encroach upon academic freedom
- The results are used constructively, not punitively

It is a process by which individual student learning outcomes are defined at the institutional, program, and course level. For a particular outcome, expected student achievement is compared with actual outcomes, using predetermined benchmarks. If the results are lower than what has been determined to be acceptable, a plan to improve student learning is developed and implemented.

Assessment, in this context, is not related to grades or faculty evaluation. Although students provide evidence of learning, this is not an assessment of individuals, but an assessment of curriculum design and institutional best practices to the end that students are successfully learning.

Philosophy

Self-assessment is a natural extension of instruction and student services, and all members of the College share in this responsibility. It is a means to an end, with the result being continuous improvement in student learning. Student populations are becoming more diverse and a rapidly changing employment economy creates challenges to meet all students' needs effectively. Consequently, the teaching methods of today may not work as well for tomorrow's learners. We need to continually assess what is working and what requires improvement. Another trend that makes self-assessment a natural academic activity is the culture of teaching and learning is shifting from independence and autonomy to interdependence and collaboration. Intra-departmental, collaborative assessment is a natural extension of this culture. We want to ensure that students are learning, so we should be interested in verifying this. Finally, we are accountable to external organizations and students, as consumers, for our learning effectiveness. Assessment certifies the quality of the education we offer.

Some people fear that student learning outcome assessment is a slippery slope, and if we "give in" to it, instruction will eventually become heavily regulated by the Department of Education. In truth, if we do nothing or respond slowly to implementing assessment, such regulation will be a foregone conclusion. Rather, it is by thorough, self-initiated assessment that we will retain our autonomy and, thus, the quality of our instruction. Regional accrediting agencies are our ally in this effort and are working diligently on our behalf. The Accrediting Commission for Community and Junior Colleges (ACCJC) requests reports about our progress, not to micro-manage us, but rather to make a case to the Department of Education that we are effectively conducting assessment and intervention of the DoE is not necessary. The more we can accomplish, the more progress we can report to the ACCJC, and the better protected we are against regulation.

Several models and approaches to assessment have been discussed during faculty flex days, faculty chair meetings, and learning outcome workshops. Several major themes have emerged from these discussions:

- We favor a philosophy and a process that best supports full faculty participation and the successful completion of an assessment cycle, including the definition of outcomes and assessments, assessment design and collection of data, analysis of the data, and implementation of improvements based on the data.
- We favor a process that is simple, but not simplistic. Outcome assessment should be simple enough to be manageable and sustainable, but it should thorough enough to assess and improve instructional programs and services.
- We favor quality over quantity. Due to the large number of course student learning outcomes, we cannot assess every single outcome in a sustainable cyclical fashion. Therefore, priority should be given to high impact learning outcomes. There are considerably fewer program and institutional learning outcomes, however, and we should strive to incorporate all of those into a sustainable cycle.
- We favor assessment being a faculty-driven process to ensure that it is constructive and non-punitive.

Roles and Responsibilities

Faculty/Department Chairs

Faculty or Department Chairs assume primary responsibility for all aspects student learning outcome or administrative outcome assessment, although the process should be collaborative within departments and/or programs, and it may be necessary to rely more heavily on particular faculty members who have more expertise in a course's subject matter. The ACCJC is interested in seeing evidence of collaboration and dialog, so it is important to maintain detailed department meeting minutes evidencing this discussion.

Student Learning Outcome Coordinator

The Student Learning Outcome Coordinator (SLOC) provides college-wide leadership in the implementation of student learning outcome assessment. This includes the following:

- Obtain training in regional and state-wide SLO workshops.
- Work with the Curriculum and Instruction Council to establish an institutional process.
- Mentor and train the College faculty in the design of outcomes and assessments and the implementation of assessment studies.
- Document progress that is being made at the College in each phase of the assessment process.
- Report progress to constituents, including the College community and ACCJC.

The SLOC should have a strong understanding of curriculum, program review, and accreditation standards and is a member of the Curriculum and Instruction Council. The following is a list of other skills identified as necessary for SLOCs, based on input from SLOCs, curriculum chairs, and administrators throughout California:

- An understanding of student learning outcomes and assessment
- Classroom teaching experience
- Educational research
- Sensitivity to diverse backgrounds
- Faculty leadership
- Strong interpersonal and motivational skills
- Organization and ability to keep current records
- Knowledge of institutional processes

Institutional Researcher

Cerro Coso has access to the District Institutional Researcher 2 days per month for support for unit plan, program review and student learning outcome assessment data. However, this support is not adequate—especially with respect to the need for a researcher's guidance on the design of effective assessment studies. Although many faculty are familiar with research practices, few have any experience with educational research. We are in need of a researcher who is dedicated to our campus to provide guidance in the crafting of assessments that are valid and reliable and to assist in the collection of data that is not easily attainable through classroom-embedded assessments or through Oracle Discoverer. It is important that we have a researcher who is a member of our college culture and understands the complexities of serving students across multiple sites over a large geographic area.

Process

There are 3 primary phases to outcome assessment:

I. Outcome and Assessment Definition
II. The Assessment Study
III. Implementation, Planning, Budgeting

I. Outcome and Assessment Definition

Student Learning Outcomes identify what students can DO to demonstrate that they are learning. There should be clear linkages between student behavior, the production of a learning artifact, and assessment of that artifact. Other characteristics of student learning outcomes include:

- They are NOT instructional objectives or goals
- They are an observable behavior that demonstrates that learning has occurred
- They focus on the end result, not on the learning process.
- They are learner-centered, rather than instructor-centered.
- They may or may not be content specific
- They should take a diverse student population into account
- They should be delivery platform independent (classroom, ITV, online)
- As much as possible, they should require higher-level cognitive, affective, and/or psychomotor domains.

Student learning outcomes should be defined for:

- the institution, defining broad learning outcomes under which all courses fall
- general education competency areas
- certificates and degrees
- individual courses
- instructional support and student services

Ideally, program learning outcomes should be defined first, resulting from input from advisory committees or academic organizations for the discipline. Course learning outcomes should emerge from program learning outcomes. A matrix is useful in presenting how courses align or map to program learning outcomes.

Administrative Unit Outcomes (AOU) identify what students (or clients) will experience or receive as a result of a given service. AOUs may also be business related, identifying particular goals related to efficiency or achievement.

Structure

To be fully descriptive and useful, the structure of a student learning outcome includes

- The condition in which student learning takes place
- An observable outcome to demonstrate that learning has occurred
- A specification of acceptable results
- The assessment tool and method.

Conditions. In our course outlines of record and program documents, the condition is either "upon successful completion of the program" or upon successful completion of the course."

Outcomes. We refer to Bloom's Taxonomy of Educational Objectives (see Appendix A) for suggestions about appropriate observable outcomes (although Bloom's is not an exhaustive list). Bloom organized outcomes into three domains: cognitive, psychomotor, and affective. The cognitive domain relates to knowledge, the psychomotor domain relates to skills, and the affective domain relates to attitudes and values. If possible, we favor a set of outcomes that draw from each domain, although the psychomotor domain may not be appropriate for all programs or courses. Each of those domains has outcomes further organized according to depth of processing. We favor higher level outcomes that demonstrate critical thinking, a high degree of skill mastery, or personal integration of attitudes and values. Such higher level outcomes are listed in the right columns of of the outcome tables.

Acceptable Results. It is also useful to determine what the acceptable benchmark of student achievement will be. This has nothing to do with students passing courses or obtaining credit. Although we are measuring student learning in assessment, the objective is to determine how well we are doing with respect to instruction or student services. The question to be considered is: at what level would we determine that there is nothing more that we can do to improve student learning? There are student success factors that are outside of our control, so 100% student success is not realistic. However, something less than 100% will be appropriate, perhaps 90%, 85%, 80%, etc.

The determination of what will be acceptable is dependent upon many factors and, at first, may have to be a best guess among departments and program areas. That benchmark may differ from department to department, and it may differ between courses within a department. It may even differ between outcomes within a single course. An illustration of why this may differ is the following:

In some programs, entry level courses may have greater attrition than advanced courses because some students likely discover sooner rather than later that the program is not a good fit for their interests or aptitudes. This is a factor over which we have no control. Defining 75% as an acceptable result for assessment may be appropriate for an entry level course, during which many students are determining whether they are really interested in that program of study, whereas 95% might be appropriate for the capstone course of the same program because presumably by that time, students are confident about their academic goals. We would expect greater success, given the same quality of instruction.

Again, you are determining the point at which you believe institutional enhancements will no longer improve the results. This benchmark will inform you about what to do with the assessment data—make improvements or congratulate yourselves. There isn't a science to this. Determining appropriate levels is best achieved through continuous dialog within your department, as well as reassessment of the criteria after an assessment cycle.

Assessment Artifacts. Finally, the student learning outcome assessment definition needs to specify how the outcome will be measured. This includes an artifact and a method for scoring the quality of that artifact. Examples of common assessment artifacts include:

- Projects
- Portfolios
- Essays
- Speeches
- Performances
- Skill Demonstrations
- Athletic performances
- Exit Interviews
- Multiple Choice Exams
- Essay Exams
- Surveys
- Critiques

The artifact(s) chosen for the assessment should be appropriate for the outcome verb. For example, a learning outcome of *describe* is better measured by an essay than a multiple choice exam. Another consideration for the selection of an artifact is the relative ease or difficulty that the assessment can be conducted. Exams and surveys are easier to administer than portfolio assessments that are scored with a rubric. Departments should give careful thought about choosing an assessment that effectively measures the learning outcome, but is also reasonable to administer. An ideal assessment definition that is never implemented has little value.

Assessment Scoring. Some of the above artifacts can be simply scored for correctness, as is the case with multiple choice exams. Rubrics are appropriate for scoring projects, portfolios, essays, speeches, performances, skill demonstrations, critiques or essay exams. Response scales, such as Likert (respondents choose Strongly Agree, Somewhat Agree, Neutral, Somewhat Disagree, Strongly Disagree) may be useful in scoring surveys, interviews, or critiques. A scale might also be used to score a artifact holistically.

Assignment or course grades are not a valid means of assessing student learning outcomes for the following reasons. Course grades and many assignments reflect multiple skills and outcomes. We need to tease out a specific outcome for measurement. Course grades also may reflect criteria that have nothing to do with course learning outcomes, but are imposed within a course to motivate participation and the development of a learning community. Grades are an individual evaluation, whereas outcome assessment is collaborative and the results generalized.

However, certain types of course assignments can be leveraged for student assessment AND course assessment. To do so, you would need to ensure that the same assignments and measuring tools are used in every single section of a course over multiple semesters and among all faculty. There must be a way to tease out a specific outcome and assess only that outcome.

Instructional Student Learning Outcome Examples

The following are examples of several complete outcome statements, where purple is the condition, green is the outcome, blue is the acceptable result, and orange is the assessment tool and method:

Upon successful completion of the course, students will be able to:

- Evaluate the the merits of various learning theories and reflect on how they might be applied to their own practice with 80% accuracy and thoroughness. This will be measured with an essay, scored with a rubric.
- Compose basic lyric and prose poems that integrate the key elements of poetry writing with 85% accuracy and completeness. This will be assessed through an appropriate sample of student poetry, scored by a rubric.
- Apply the use of communication as a helping skill. This is to be measured by an oral presentation, scored by a rubric.
- Construct diagrams that accurately explain and demonstrate such earth science processes as the hydrologic cycle, the rock cycle, and the plate tectonic cycle. This will be evaluated through lab reports, scored with a rubric, based upon professional society guidelines.
- Analyze case studies and identify the best possible solution to a problem. This will be measured by a multiple choice exam, with the criteria of success being that 80% of students answer correctly.
- Demonstrate stage techniques in the performance of cold readings and monologues. This will be measured through peer critiques, scored through a faculty-developed rubric.

Upon successful completion of the program, students will be able to:

- Develop and display a portfolio of visual art works from a variety of visual art disciplines that reflects a personal direction and individual creativity. The portfolio will be assessed by a rubric.
- Demonstrate that they are prepared for one or more of the occupations specified in the program descriptions for digital animation. This will be measured by exit surveys, scored with a Likert scale.

Upon graduation from the institution, students will be able to:

- Use inductive and deductive reasoning to analyze complex problems and synthesize appropriate resolutions. This will be measured with a post graduation alumni survey that uses a 5-point Likert scale to determine the extent to which students believe they are competent.
- Connect the contributions of the humanities to the development of the political and cultural institutions of contemporary society. This will be measured with a post graduation alumni survey that uses a 5-point Likert scale to determine the extent to which students believe they are competent.

Student Services SLO Examples:

- Given the completion of a counseling session, 80% of students will be able to articulate, identify, develop, and clarify educational, career, vocational, degree, and transfer goals. This will be measured with a survey that uses a 5-point Likert scale to determine the extent to which students believe they are competent.
- Given Web-based and printed instructions, 90% of students will be able to successfully apply, update, register, and drop classes. This will be measured using data collected from the computer in Admissions and Records and from BanWeb.
- Given a detailed orientation, 90% of EOPS students will effectively use services and support to make satisfactory academic progress and achieve career goals. This will be assessed with a rubric that is completed by the counselor following meeting with a student.
- Given print and electronic resources, 90% of veterans will be able to identify the necessary steps for obtaining educational services for veterans. This will be measured and scored by a survey in which steps are ranked in the order in which they should occur.
- Given the Student Conduct Policy, 90% of student athletes will act in accordance with the Cerro Coso's Student Conduct Policy both on and off the field. This will be assessed by documenting incidents of athlete misconduct and deriving related data.

Administrative Unit Outcome Examples

- Given appropriate staffing and resources, 90% of graduating students will rate service received from the Office of Admissions & Records as "excellent." This will be assessed with a survey, scored by a Likert scale.
- Given appropriate staffing and resources, 90% of students will evaluate campus maintenance and security as "excellent." This will be assessed with a survey, scored by a Likert scale.
- Given appropriate resources and recruitment, the girl's basketball team will place among the top 3 schools in the league. This will be assessed through conference points awarded to individual teams.

Approval of Student Learning Outcome and Assessment Definitions

Student learning outcomes are identified in the appropriate curriculum documents, such as the program curriculum form or the course outline of record and are approved by the Curriculum and Instruction Council (CIC) via the approval of those documents. CIC and the SLOC are faculty resources to provide input and guidance on the crafting of outcomes so that the outcomes are observable, measurable, and use higher order learning domains (critical thinking) whenever possible. Bloom's Taxonomy is recommended as a resource for the selection of outcome verbs.

CIC requires that ALL student learning outcomes have assessment statements included in all new or revised course outlines of record and program documents. Assessment statements simply follow as a second sentences in the Student Learning Outcome Assessment sections of the CORs and program documents (see the above examples).

II. The Assessment Study

The **Assessment Study** is the process by which a learning outcome is actually measured and the results analyzed. It is important to understand that only 1 outcome is assessed in a particular study.

This phase occurs over an appropriate period of time, to allow data to be collected from a sufficient sample. For the assessment of course student learning outcomes, this is usually 2-3 semesters. For program learning outcomes, it could be 2-3 years. There are 3 steps to the Assessment Study phase:

1. Design the study
2. Collect the data
3. Analyze the results

Design the Study

In the previous phase, the assessment artifact, scoring method, and possibly the criteria for success will have already been defined. At this point, however, departments or program areas will need to work out the details of how the assessment will be conducted. The following issues/questions should be considered:

- What outcome will be assessed? Some suggestions...
  - A program's highest impact learning outcome
  - An outcome from a high impact course
  - An outcome that faculty are extremely passionate about
- Who is on the assessment team?
  - Subjective assessments must have 2 or more assessors to reduce bias
  - Objective assessments must have someone to tabulate the results
- What assessment artifacts or scoring devices need to be developed? For example:
  - Exam questions
  - Surveys
  - Interview questions
  - Likert scales
  - Rubrics
- What criteria will be used to determine whether the outcome of the study is successful or not (if not previously defined)?
- How will assessment artifacts be collected from students and archived until a review of those artifacts occurs? For example:
  - Video taping performances
  - Photocopying written works
  - Photographing visual works
  - Electronically storing digital works
  - Generating a mailing list for surveys, and budgeting for postage and self-addressed, stamped return envelopes
- What will constitute a sufficient sample?
  - Data should ideally be collected from multiple course sections across terms, sites, delivery modes, and instructors. Depending upon the number of sections offered each semester, a sufficient sample may require data collection over 2-3 semesters. A few courses, however, may provide a sufficient sample over a single semester, due to the number of sections offered and variation of delivery locations, modes, and instructors. ENGL C101 may be an example.
  - Similarly, program learning outcomes should be assessed with a sufficient sample, which may mean several groups of graduating classes over 2-3 years.
- How will the results be recorded?
  - Both objective and subjective data needs to be tabulated and compiled.
  - Who will write the analysis of the findings?

Collect the Data

With thorough planning, the data collection process is fairly straightforward. There are a few points of note, however:

- The same artifact and scoring method must be used throughout the study. In other words, exams cannot be given to some students and not others. If the assessment artifact is an embedded class assignment, all course sections, regardless of instructor or delivery mode, must include the identical assignment. If multiple assessment artifacts are used, then all must similarly be used consistently.
- Given that only 1 outcome is assessed in a particular study, and course-embedded exams usually cover multiple course outcomes, the exam questions that pertain to the particular outcome need to be identified and the results somehow teased out and tabulated separately. Unless the entire exam only pertains to the single outcome, the general exam results cannot be used.
- Subjective evaluations must be conducted with a team of assessors to reduce bias. **All** assessors must evaluate **all** artifacts. In other words, the team cannot divide the work up to get through the process faster.
- It might be useful to document other data in association with learning outcome results, such as semester term, delivery mode, instructor, and/or campus site. This will be useful for analyzing the results and planning for improvement.
- Departments might consider incorporating retention/attrition data into the results. We should not merely be interested in the students that persisted to the end of the course, but also those who dropped out along the way.

Analyze the Results

After tabulating the results and having already determined a benchmark of success, it will be clear whether students are achieving the outcome above, at, or below the expected level. If the result is at or above the expected level, congratulations are in order! This implies that there is nothing department faculty can do to improve the result. However, it may be worthwhile to discuss whether the criterion was set too low. This may be obvious if the department faculty can identify practices that could improve the result further.

If the result is lower than expected, there should be discussion about why that is the case and what can be done to improve the result. This is where the identification of other data in association with the outcome data is useful. If on-site courses have a better result than online courses, what can be done to improve student learning in online sections? If results are better for 16-week semester courses than for 8-week summer courses, is there a way to improve the outcome for summer courses? Perhaps the solution is that particular course should not be offered during the summer because there is not enough time on task. If one instructor produced better results than others, what is that instructor doing that should be replicated throughout the department?

Please note that this data should not be used to penalize faculty or to point out failures. It should only be used to identify best practices and implement what works well more consistently. This is a constructive process and faculty should have that spirit about it. (This is also a good time to point out that while faculty are asked to discuss student learning outcome assessment as a part of the Faculty Evaluation process, this should simply be a discussion of the instructor's involvement in the process. The results of assessment are not included in faculty evaluation.)

Based on a collaborative departmental process, the results should be analyzed and a plan for improvement developed. Be sure to take detailed minutes of all meetings in order to provide evidence of collegial dialogue.

III. Implementation, Planning, Budgeting

If a plan to improve student learning was developed, it should be implemented and reassessed in a new Assessment Study to verify that student learning has, indeed, improved. As has been previously mentioned, assessment is an on-going and cyclical activity. If the results of the previous study were acceptable, the next Assessment Study should focus on a different outcome.

Assessment results and plans for improvement **must** be integrated into our other institutional plans and processes. Because Cerro Coso Community College exists so that students may learn, there must be a link between the results of Assessment Studies and everything else that we do at Cerro Coso.

Assessment results and plans should be included in the Department Unit Plan and in Program Review. The Unit Plan is included in the Educational Master Plan, which drives the College's Technology Plan, the Staffing Plan, the Facilities Master Plan, and the College's budget. Some improvements to student learning can be made with instructional practices, but sometimes institutional support is needed, and this process accomplishes that.

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Assessment Results

Student learning outcome assessments are housed in the Assessment Module of the college's curriculum database, Curricunet. Below are links to the search function for each type of outcome. Use the form fields in the following screens to filter your search.

- Course Learning Outcome Assessment Results
- Program Learning Outcome Assessment Results
- General Education Learning Outcome Assessment Results
- Insitutional Learning Outcome Assessment Results
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(Note: Program Learning Outcomes and Student Services Outcomes assesments are still being migrated to Curricunet. Those assessments currently reside in in a wiki in the Student Learning Outcome Assessment Moodle.)

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Assessment Tools & Resources

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- Sampling for the Assessment of Student Learning Outcomes

Developing Rubrics

- Ten-step Process to Building Rubrics
- Rubric Worksheet
- Rubric Worksheet Sample
- Rubrix (software)
- RCampus - Rubric Software

Developing Surveys

- Tips for Creating Surveys
- Building Online Surveys
- Likert scale & surveys – best practices
- Survey Monkey - Web Survey Tool

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Best Practices and Guidelines

- RP Group - BRIC Inquiry Guide-Assessing Student Learning Outcomes
- POWERPOINT - Assessing Student Learning Outcomes
- Academic Senate CCC - SLO Terminology Glossary
- Academic Senate CCC - Guiding Principles for SLO Assessment
- Academic Senate CCC - Data 101
- SLO Glossary of Terms
- Assessment Methods Toolkit
- The Case for Authentic Assessment - Wiggins
- California Assessment Institute
- Promising Practices Archive
- ACCJC Quarterly Newsletters
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Some documents on this site require Adobe Acrobat Reader. You can download it here for free.

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Bloom’s Taxonomy

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Arrange	Cite examples of	Add	Analyze	Arrange	Appraise
Choose	Comment	Adopt	Appraise	Assemble	Assess
Count	Compute	Apply	Audit	Blend	Award
Define	Convert	Calculate	Calculate	Build	Censure
Describe	Defend	Capitalize	Categorize	Categorize	Compare
Duplicate	Define	Change	Check	Collect	Conclude
Find	Demonstrate	Classify	Compare	Combine	Contrast
Group	Describe	Complete	Contrast	Compile	Criticize
Identify	Differentiate	Compute	Criticize	Compose	Critique
Label	Discriminate	Construct	Debate	Conceive	Decide
List	Discuss	Demonstrate	Deduce	Construct	Defend
Locate	Distinguish	Develop	Design	Create	Determine
Match	Estimate	Discover	Detect	Design	Estimate
Memorize	Expand	Divide	Develop	Develop	Evaluate
Name	Explain	Dramatize	Diagram	Devise	Grade
Outline	Expound	Draw	Differentiate	Explain	Interpret
Pick	Express	Employ	Discriminate	Form	Judge
Point to	Extend	Examine	Dissect	Formulate	Justify
Quote	Extrapolate	Exercise	Distinguish	Generate	Measure
Recall	Generalize	Graph	Examine	Group	Prioritize
Recite	Give examples	Illustrate	Experiment	Hypothesize	Rank
Record	Illustrate	Interview	Infer	Integrate	Rate
Relate	Indicate	Make use of	Inspect	Make	Recommend
Repeat	Infer	Manipulate	Inventory	Manage	Reject
Reproduce	Interpret	Modify	Question	Modify	Score
Say	Paraphrase	Operate	Reason	Order	Settle
Select	Predict	Organize	Screen	Organize	Support
Show	Project	Perform	Sift	Originate	Test
Sort	Propose	Practice	Simplify	Plan	Validate

Spell State Summarize Tally Tell Underline	Qualify Rearrange Restate Review Rewrite	Produce Schedule Shop Show Sketch Solve Subtract Translate Use	Solve Summarize Survey Test Utilize	Predict Prepare Prescribe Produce Propose Rearrange Reconstruct Restructure Revise Rewrite Synthesize Write	Value Weigh

CurricUNET Assessment Module Manual

The CurricUNET Assessment Module can be found under the Assess section in the left column of the CurricUNET home page. There are separate links for course learning outcome, program learning outcome, institutional learning outcome, and student services learning outcome or administrative unit outcome assessments.

Course Assessments

To add a course student learning outcome, click the Course link under the Assess heading:

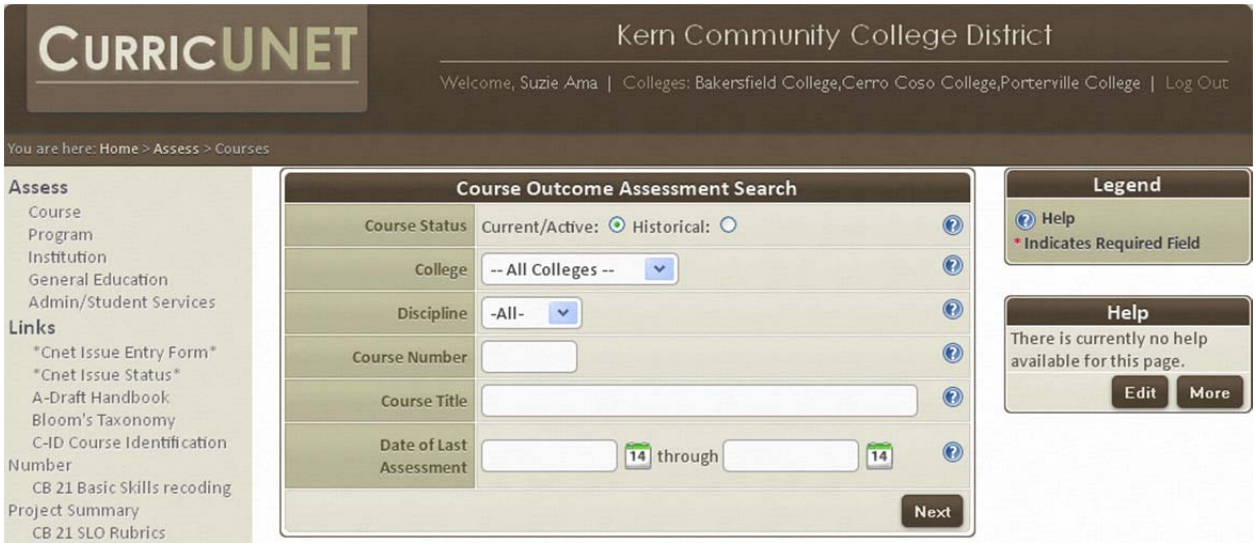
identify disabilities that impede access to web content and categorize appropriate accommodations for each.

It is advised that Faculty Chairs complete assessment plans and enter the data—especially if your department is assessing multiple sections of a course and you have multiple instructors teaching those sections. There needs to be department-wide dialogue about what the plans are for assessing each outcome, and data from multiple sections or multiple measures must be aggregated. The analysis of the results also must be discussed within departments, so it makes sense for the results of that conversation

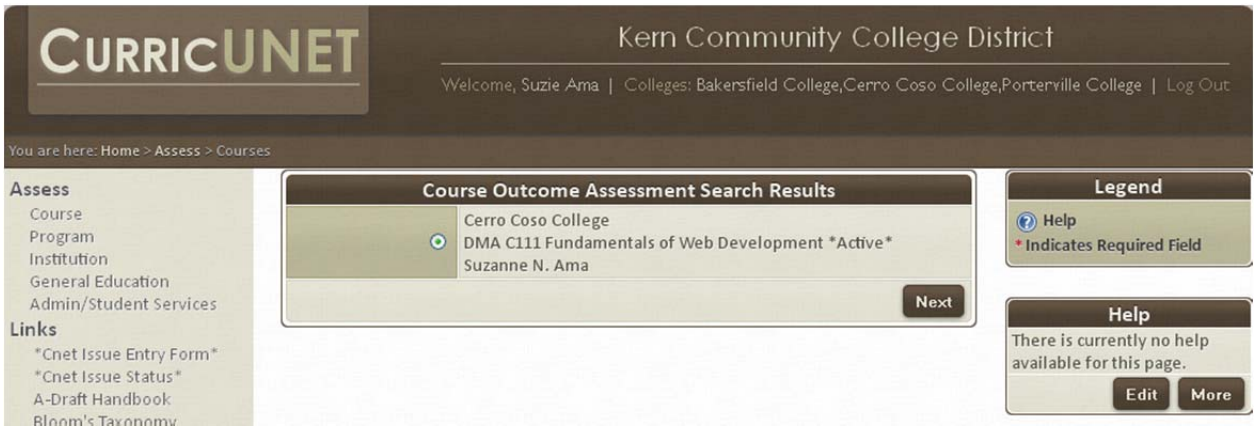
to be recorded by 1 person—probably the Faculty Chair. However, if someone else in your department wants to be responsible for recording this information, that is fine too.

Selecting An Outcome to Assess

The next screen provides search/filter parameters. At a minimum, enter Cerro Coso and your discipline, and click Next.

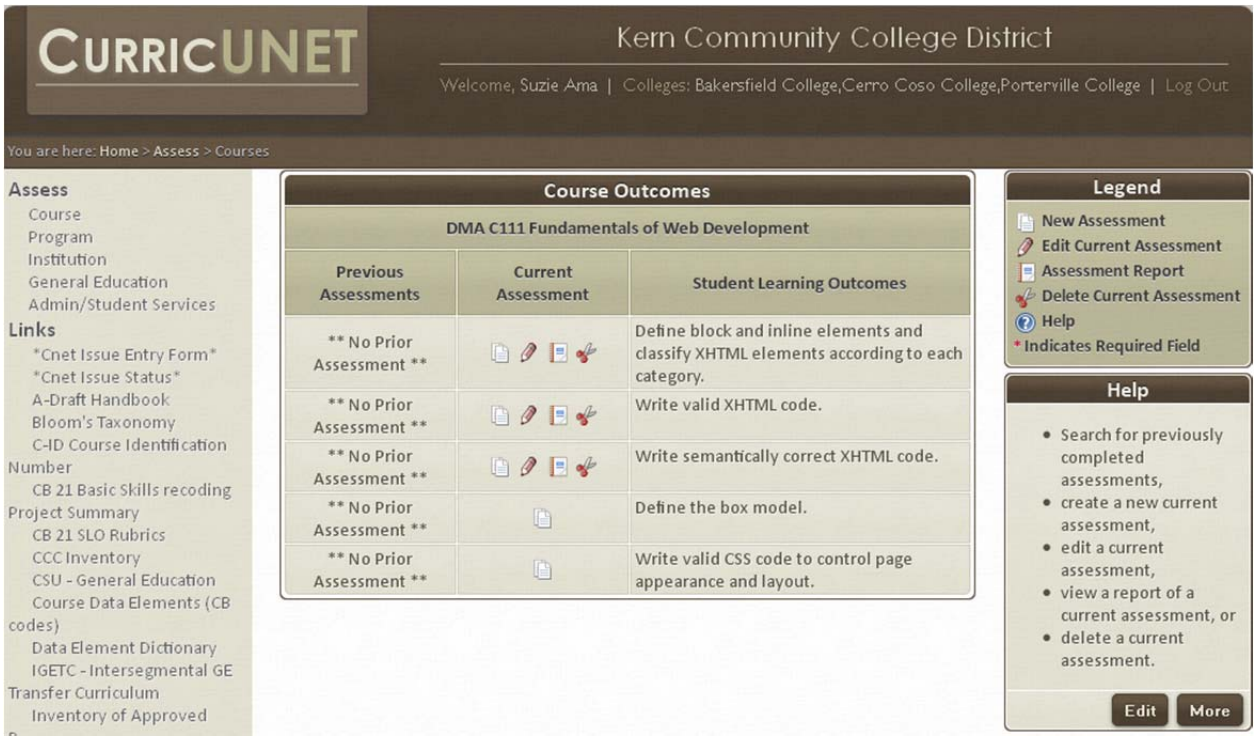


If you left the Course Number field blank, all courses in your discipline will display. If you entered a specific course number, only that course will display, as shown below. Click the radio button that corresponds with the course you are assessing, and click Next.



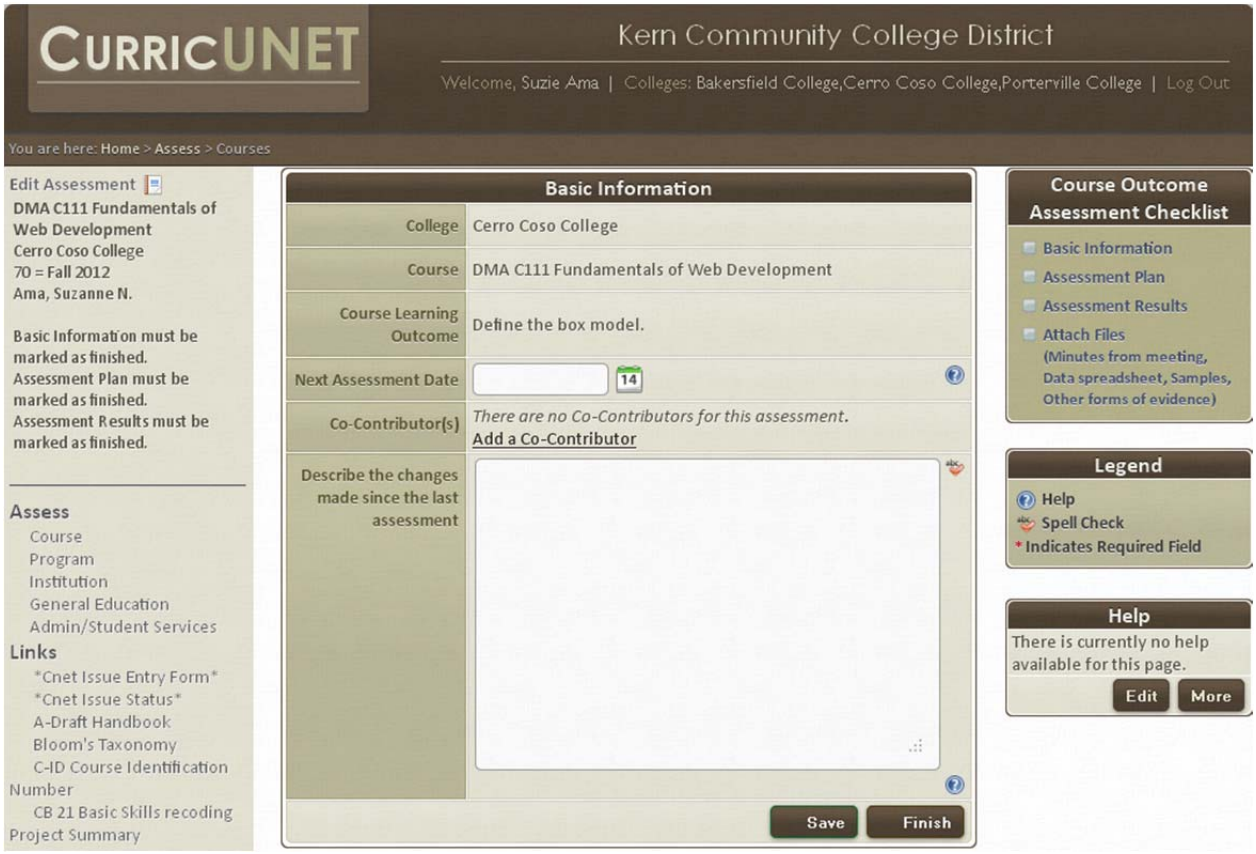
The following screen displays all of the student learning outcomes for course. These are populated from the active course outline of record in CurricUNET. If you have completed historical assessments, you can access those from the first column. In this example, there are no previous assessments.

If you have already started an assessment that is not yet complete, there will be icons to edit, delete, and print a report of the assessment. To create a new assessment for a specific student learning outcome, click the Copy icon. To edit an incomplete assessment, click the Pencil icon.



Basic Information

The first screen of the assessment is Basic information. Enter the date this outcome will be assess again after this assessment is complete (I will likely request that this field be moved to the Results section). Identify a co-contributor for this assessment. Describe how the results of the previous assessment were used to improve student learning and affect institutional priorities in the last text field. If this is the first assessment for this outcome, indicate "N/A – First Assessment," or something to that effect. Click Save to apply information and continue working in this screen. Click Finish to save and close this section, which will turn this section green in the Checklist.



Assessment Plan

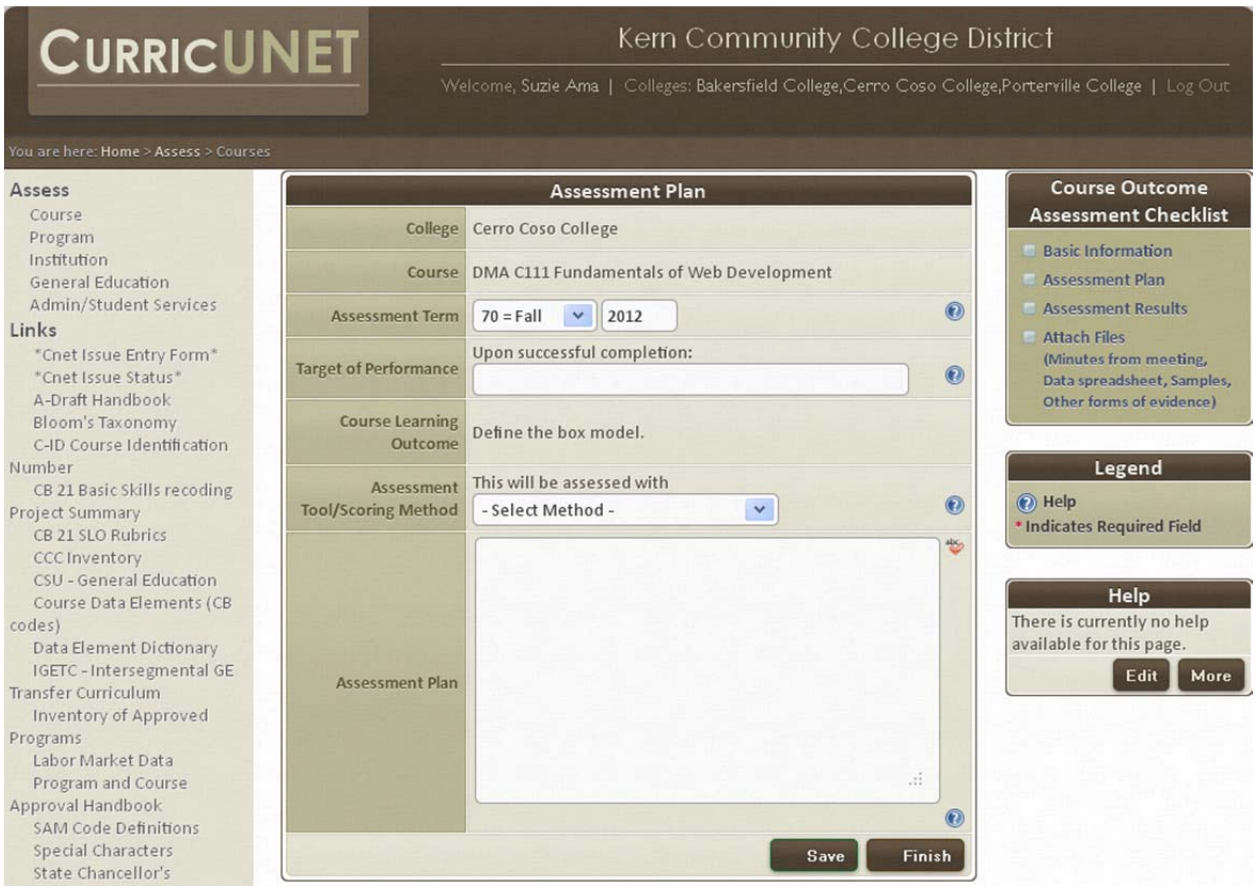
The next step is the Assessment Plan section.

Identify the term that the assessment data was or will be collected.

Identify the target level of performance (e.g. “80% of students will be able to”). This target should reflect what you anticipate students’ performance to be if curriculum and instruction are ideal. This value should be determined from departmental dialogue about what you think the highest level attainment would consistently be with the application of best practices.

Choose the assessment artifact (what the student produces that will be assessed). There is a comprehensive list, but if you don’t see a specific assessment, choose Other, and describe in the additional field that appears.

Describe the details of the assessment plan—the logistics of administering the assessment, which faculty are participating, what the student sample is, etc. You’ll find a detailed assessment plan to be helpful when you assess in the next cycle. You may wish to change how the assessment is implemented to ensure greater validity and reliability of the data. We should be reflecting on our assessment methods, not just on the results of a specific assessment. Click Save to apply information, and click Finish to save and close this section.

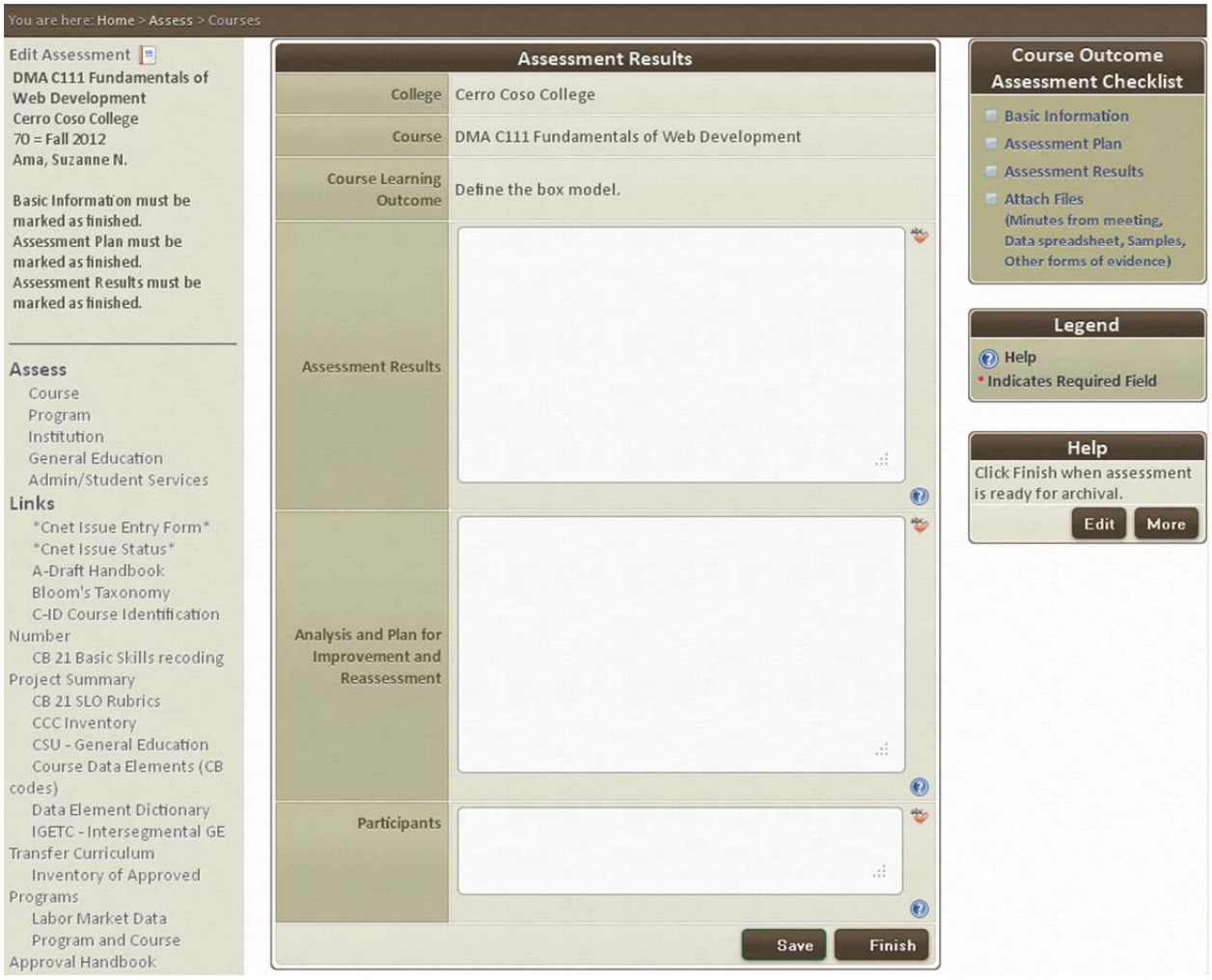


Assessment Results

Enter the aggregated data for the student learning outcome's assessment in the first field. If you have multiple exam questions, those must be aggregated into a general outcome for each student. And students' results must be aggregated across sections. I would be useful, however, to also present disaggregated data for different delivery modes (online vs. on-ground). This will better help you see problem areas.

Your department should meet and discuss the results, first identifying whether students met the target level of performance, and if not, what can be done to improve the result. If students did not meet the target, changes will need to be made very soon and the outcome reassessed. Indicate when the outcome will be reassessed, if this is the case. Finally, identify all of the faculty members who engaged in the analysis of the results.

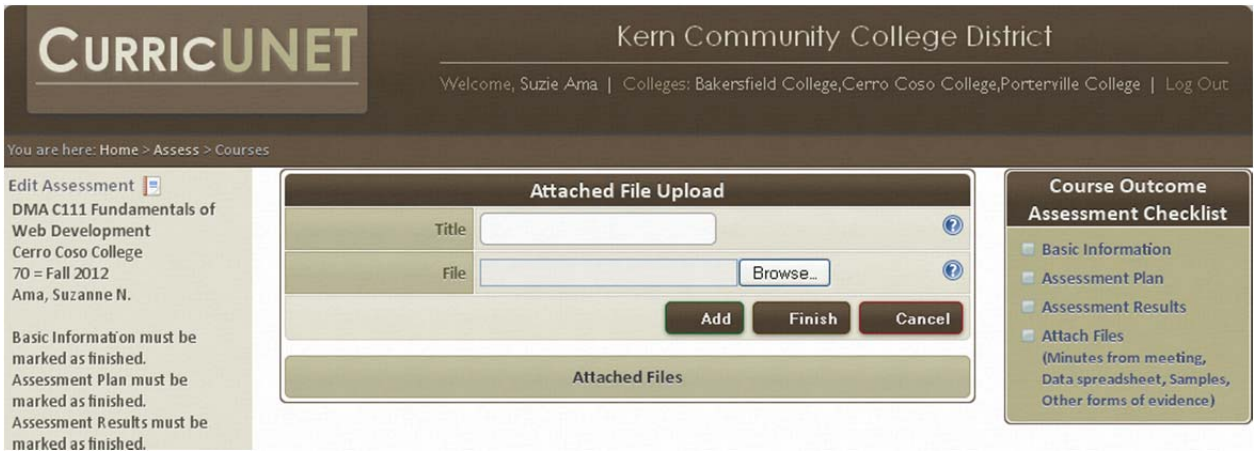
Click Save to apply information, and click Finish to save and close this section.



Attach Files

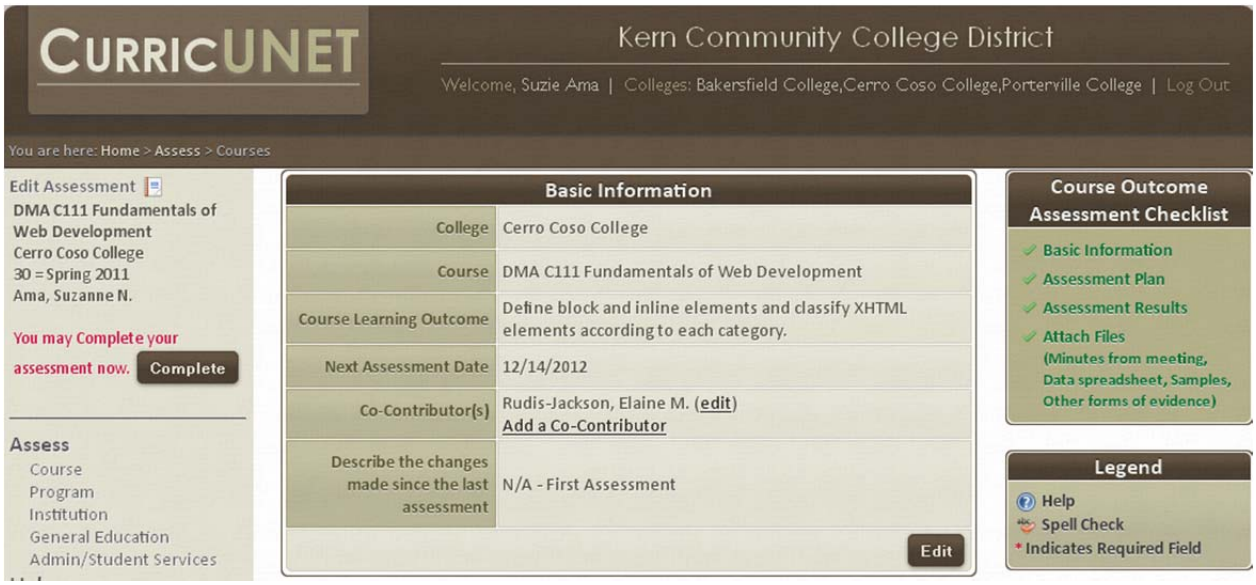
The final section of the module allows you to attach relevant files, including exam results (not the whole exam—just the specific questions that measured the outcome), scoring rubrics, or other forms of evidence. You can attach multiple files.

Click Save to apply information, and click Finish to save and close this section.



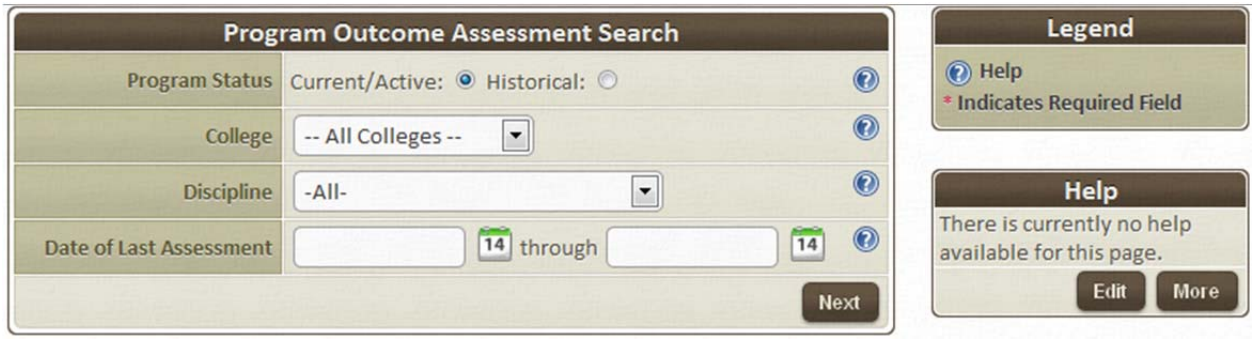
Completing the Assessment

After all sections have been "Finished", they will appear green in the Checklist, and a Complete button appears in the left column. However, do not click this button until your department is completely finished with entering data, analyzing results, and attaching files. Once you click Complete, the assessment goes into the archive.



Programs

Planning and recording assessments for program learning outcomes is identical except the initial search/filter screen lacks a field in which to enter a course number. Make appropriate selections, and then complete the Basic Information, Assessment Plan, Assessment Results, and Attach files, as described above.



Rubric Worksheet

Course Number and Course Name: Click here to enter text.

Instructor: Click here to enter text.

Student Learning Outcome: Click here to enter text.

Primary Trait	Met Outcome		Did Not Meet Outcome	

Aggregate: Click here to enter text.

Rubric Worksheet (Sample)

Course Number and Course Name: DMA C107 Computer Illustration

Instructor: Suzie Ama

Student Learning Outcome: Create aesthetic illustrations and designs that employ a grid system, gestalt principles, typographic principles, color theory, and/or usability.

Primary Trait	Met Outcome		Did Not Meet Outcome	
Application of Grid	Design is clearly organized around a grid of margins and columns.	1	It is not clear that a grid has been used to organize content.	
Principle of Typography	Principles of typography are used successfully to create style and promote legibility and readability.	1	Principles of typography have not been successfully implemented to promote legibility and readability, and/or typeface selections or combinations don't work well for the design.	
Color Theory	Color scheme is harmonious and creates mood that is consistent with the audience and intended purpose of the piece.		Color scheme is not harmonious and/or establishes a mood that is in conflict with the audience and intended purpose of the piece.	0
Gestalt Principles	Gestalt principles are effectively used to create contrast that makes visually scanning the design easy, while establishing overall unity in the design.	1	Gestalt principles are not used effectively. There is too much contrast in some areas and too much uniformity in other areas.	

Aggregate: 3/4

Sampling for the Assessment of Student Learning Outcomes

Rationale: Why sample?

For Student Learning Outcomes (SLO's), we must assess artifacts that reflect the course's desired outcomes. Sampling facilitates the assessment process when it is not feasible to assess all students—for example when programs/courses have large numbers of students or when artifacts take a long time to review. The portion evaluated is the *sample* of the entire population.

Best practice. A subjective artifact using a rubric (e.g. a research project in a capstone course or a paper) may be used **only if it is scored by an evaluation group, not the individual instructor**.

Best practice. When scoring subjective artifacts with a rubric, the evaluation group must norm before scoring. This is especially important for rubrics assessing complicated critical-thinking outcomes. In addition, it is a best practice that each artifact be scored independently by two different evaluators—that is, scored twice by two scorers who don't know that the other gave it.

Census vs. Sampling

For programs that are small, assessing the entire population may yield a more accurate measure of student learning. Assessing the entire population is called a **census** whereas assessing only part of the population is called a **sample**.

Example of Using a Census:

- An Honors section of Music Appreciation ends the course with four students, each of whom is required to write a 10-15 page paper. All four of the course's outcomes are to be assessed by the paper using a rubric. An evaluation group reads all four student papers.
- The Math Department runs eight sections of Intermediate Algebra involving 163 students. One of the outcomes is to be assessed by three questions on an exam. The exam is given in common to all 163 students on a shared platform like Course Compass which permits instructors to see the aggregate results of individual questions. The aggregate results of all eight sections are gathered, comprising responses from all 163 students.

Example of Using a Sample:

- The English Department runs five sections of Critical Thinking Through Argument involving 98 students. Two of the course's four outcomes are to be assessed by a 8-10 page paper scored by a rubric. The English department selects 20 papers randomly from the five sections.

Sampling Procedures

Before evaluating artifacts or data for the SLO, you must:

1. Decide whether you will use a sample or the whole population.
2. Choose an appropriate sample size based on percentage, artifact size and complexity.
3. Choose an appropriate sampling method.

Determining Sample Size

If you have a large program (over 100 students), you may not have the people and time to evaluate 100 artifacts. Therefore, you would choose a specific percentage of students or artifacts.

Best practice. A common standard for sampling is 10% or 10 artifacts, whichever is greater. So for populations less than 100, choose 10; for populations over 100% choose 10%.

Whether or not to sample and the size of the sample depend on three factors, all of which must be kept in mind when making sampling decisions:

1. The length and complexity of the assignments/artifacts.
2. The number of students enrolled in the course or program.
3. The number of faculty members serving as the artifact evaluators.

Length and complexity of the assignments. If the assignment or artifact is of a capstone level (e.g. research project), then a smaller percentage of students might be chosen.

The number of students enrolled in the course or program. If your course or program has less than 100 students, then you should consider using a larger percentage or the entire population. Remember that the acceptable minimum is 10 students.

The number of faculty members serving on the faculty committee. If the program has only three faculty members on the faculty committee, then a smaller sample size would be more appropriate depending on the complexity of the assignment. However, programs with many faculty members and short assignments could have a much larger sample size since there are many more people available to evaluate the artifacts.

Examples

- The Social Sciences Department runs 12 sections of Introduction to Psychology involving 250 students. Three of the course's four outcomes are assessed by a term-ending 8-10 page research paper scored by a rubric. The department has 5 full-time faculty members on staff and 1 adjunct who is willing to participate. This 6-person evaluation committee agrees to score 10% of papers. The committee selects 25 papers randomly from all 12 sections, meets, norms, reads

two papers apiece for best practice, and aggregates the results. The fourth outcome is assessed by three questions on the final exam. The decision is made that it is feasible to assess all students: percentages are gathered independently by each instructor for each section and sent to the chair for compiling.

- The Humanities Department runs 12 sections of Western Civilization involving 250 students. It also has three of the course's four outcomes assessed by a term-ending paper scored with a rubric. However, only 2 members are on the committee, so they assess only 5% of papers. They select 12 papers randomly, meet, norm, read two papers each for best practice, and aggregate the results. The fourth outcome is assessed by a short-essay answer on the final exam scored by a rubric. The 2 members agree that due to the lesser degree of complexity a 10% sampling size is feasible. They select 25 answers randomly, norm, read two apiece, and aggregate the results.

Common Types of Sampling

There are a variety of sampling methods. Simple random, stratified, systemic, and cluster sampling are examples of four common and appropriate sampling methods for institutional assessment activities.

Simple Random Sampling: You randomly select a certain number of students or artifacts. Random sampling can be done easily enough by compiling a list of all students completing the artifact and then using a random number generator, referring to a random number table, or picking out of a hat.

> ***Example:*** The Business Department runs 3 sections of Introduction to Business involving 112 students. All four outcomes are to be assessed by the final exam, and the department has decided on a 20% sample size. The faculty chair gathers the final exams from the instructors, creates a computerized list in Excel of students who completed the exam, and uses the program's random number generator to identify 22 students for each outcome (different 22 students for each outcome). The results are aggregated.

Stratified Sampling. Students are sorted into homogenous groups and then a random sample is selected from each group. This is useful when there are groups that may be underrepresented.

> ***Example:*** Child Development 101 has traditionally had few male students. In compiling the data for outcome assessment with a sample size of 20%, the faculty chair makes sure to get 20% of male students by breaking students into gender first before randomly selecting 20% from each group.

Systematic Sampling. You select the nth (e.g. 7th, 9th, 20th) student or artifact from a list.

> ***Example:*** An Introduction to Art course has been delivered in three sections with a total of 83 students finishing the course. One of the outcomes involves scoring a student art

project with a rubric. The faculty chair has sampled 10% of the student population in the past, but this semester because a section got cancelled, 10% of completing students (8) falls below the minimum threshold of 10. So the faculty chair generates an alphabetical listing of all 83 students who completed the assessment artifact and then selects every 8th student for a minimum of 10.

Cluster Sampling. You randomly select clusters or groups (e.g. classes or sections), and you evaluate the assignments of all the students in those randomly selected clusters or groups.

> ***Example:*** The English Department offers Freshman Composition in eight sections across four sites including two sections online, involving a total of 143 students. There is a single assessment instrument: a final paper scored by a rubric that contains all SLO's. Two of these sections are randomly chosen and all papers from those two sections assessed.

A Note about Stratified Sampling:

For the purposes of Cerro Coso, this method should be preferred when courses are offered in some combination online and onsite sections, or when offered at multiple sites.

A Note about Cluster Sampling:

Given the amount of variation that can happen between different instructors in different locations in different delivery modes, reservations have been raised about the viability of this choice for giving the department and the college a clear picture of any particular course assessed by it.

Nevertheless, the consensus has been to move ahead with this option for this year until it can be assessed in turn as serving our needs or not. However, clear ground rules need to be established in order to avoid the perception of bias that could result from such a selection. In particular, it must be understood that the selection of the section(s) be *random*.

To that end, the following process will be observed: sections to be identified for cluster sampling will be chosen randomly according to the best practices in this document by the Institutional Effectiveness Committee (faculty chairs are welcome to be present at the time of selection) and will be chosen after the mid-point of the semester in which the course is to be assessed. This assures that 1) no perception of bias is present, and 2) that all sections are deploying the assessment instruments as intended.

Survey Principles

Strengths	Weaknesses
Flexible format; can include several objectives	Provide indirect evidence of student learning
Can be given to large numbers of respondents	Validity depends on quality of questions
Can easily assess the views of respondents	Validity depends on honesty/ability of respondents
May be expensive (especially if mailed)	Biased or small samples lead to inaccurate data
Can be conducted and evaluated quickly	Results may not include full array of opinions
Can be used to track opinions and trends over time	Self-report of skills may be inaccurate
Can be used at a distance (web, mail)	Takes time to analyze open-ended questions
Open-ended questions allow unanticipated results	Survey overload & low response rates (20% mail)

How To Do It

1. Decide what your goals are. What SLOs are you trying to assess?
2. Who are your respondents?
3. What will you ask in order to get the information you desire?
4. How are you already assessing the outcomes?
5. How will a survey add to your current assessment procedures?
6. How will you evaluate the information?
7. How will you use the information to be more effective?
8. Who will you share the information with (the respondents, your department, the world, etc.)

Format Tips

1. Use plenty of white space
2. Be sure the bubbles align with the questions (use a table)
3. Use typeface that is easy to read (and large fonts if some respondents may need large print)
4. Be sure each item is contained on one page
5. Make sure the first question relates to the topic
6. Arrange sensitive questions later in the survey
7. Use consistent response formats (e.g., 1=lowest; 5=highest)
8. Vary the type of questions: closed, open, skill acquisition, evaluative, etc.

Sources:
Allen, M. (2004). Assessing Academic Programs in Higher Education. Boston: Anker Publishing.
Fink, A (2003). The Survey Kit. London: Sage Publications.
Malloy, C.L. & Urman, H.N. (2005). The Nuts and Bolts of Survey Design and Administration. Presentation at the American Evaluation Association and the Canadian Evaluation Society.

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Allen, M. (2004). Assessing Academic Programs in Higher Education. Boston: Anker Publishing.
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Effective Survey Techniques

Cautions	Example
Avoid compound items	Did you like the course and instructor?
For closed-end questions, include all possible response categories	Include: Other or Not Sure or Not Applicable
Avoid vague questions	Did you learn because of your efforts?
Avoid confusing wording	I use the library. ___ True ___ False
Allow for students who cannot answer the question	How often do you use your home computer? How should students without a home computer respond?
Avoid biased wording	Good students tend to study at least 3 hours outside of class for each hour in class; estimate the number of hours you study outside of class
Avoid questions that threaten or alienate your respondents	How concerned are you that our efforts to increase campus diversity threaten academic quality?
Be careful of order effects, when the response to one question influences the response to later question	In your opinion, how many hours does a good student study? *Followed by:* How many hours do you study?
Consider specifying a timeframe	How many servings of fresh fruits and vegetables have you had in the last week?
Avoid negative wording	I received ineffective career advice. __ T __ F
Remember cultural differences	If you had a personal problem while enrolled here, did you use the counseling center or did you consult with a professional such as a priest or therapist? *What about a rabbi, minister, parson, elder, mullah, or other religious representative?*
Avoid jargon and technical terms	Should the US Government commission a summative evaluation of DSPS?

Sources:
Allen, M. (2004). Assessing Academic Programs in Higher Education. Boston: Anker Publishing.
Fink, A (2003). The Survey Kit. London: Sage Publications.
Malloy, C.L. & Urman, H.N. (2005). The Nuts and Bolts of Survey Design and Administration. Presentation at the American Evaluation Association and the Canadian Evaluation Society.