# Program-Level Assessment

## *Guidelines for Improving*
## *Program-Level Student Learning Outcomes*

This guidebook is designed to guide practitioners at the Community College of Denver through the steps of program-level assessment and offers strategies for assessing Program-Level Student Learning Outcomes. It is particularly useful to program chairs as well as others interested in program assessment in order to effectively guide program review and improvement.

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The Student Learning Committee at the Community College of Denver

The contributing authors are grateful to the Student Learning Committee at the Community College of Denver who provided their suggestions on this handbook. We would also like to acknowledge the support of Bernice Harris in creating this guidebook.

A Special Note: We would like to acknowledge the many practitioners and researchers whose work has been adapted heavily throughout this handbook, particularly the *PROGRAM-Based Review and Assessment: Tools and Techniques for Program Improvement* published by the University of Massachusetts Amherst and available through their Office of Academic Planning and Assessment.

# Table of Contents

# AN OVERVIEW OF ASSESSMENT AT CCD

**The Assessment for Student Learning Committee ("SLC"):** is made up of full time and adjunct faculty as well as staff from different departments, including: Fast Start, the Center for Educational Advancement, as well as the Dean of Student Services to name a few. The members represent both general education and CTE programs. We meet once a month and host programs, mini conferences, coffee talks and discussions on assessment topics.

- **Assessment at CCD is broken down into three main tiers: Institutional, Program and Course Level.**
  1. Institutional-level assessment efforts focus on evaluating the Institutional Learning Outcomes (IOs) that CCD students must achieve at graduation. Assessment of these broad skills and abilities is cross-collaborative and in keeping with the spirit of the College's mission and strategic plan.
  2. Program-level assessment unites Deans, chairs and faculty to evaluate Program Student Learning Outcomes (PSLOs). These assessment efforts help programs to focus on determining whether students have acquired the skills, knowledge, and competencies associate with the program of study.
  3. Course-level assessment engages chairs, full-time faculty and adjuncts in analyzing Course Outcomes to gauge the extent of student learning that is taking place within the classroom environment. All Course-level assessment projects link to Program Student Learning Outcomes and the Institutional Outcomes.

# Highlights and Descriptions of the Assessment at CCD:

- **Student Learning Committee (SLC):**
  We are a faculty-driven committee committed to creating a culture of assessment at CCD. While our focus is integral to academic assessment, we proudly work with the Institutional Research Department, The Teaching and Learning Center, administration and support staff.

- **Course assessment processes and annual report:**
  All department chairs submit an annual report on any course-level assessment of student learning outcomes. This report further clarifies ways that course-level assessment efforts address broader program or institutional outcomes. Members of the SLC committee then, review these reports.

- **Review committee for annual course assessment reports:**
  The SLC established a committee to peer review the annual course assessment reports. The purpose of this committee is not to overtly rate the quality of reports; rather, these committee members assist faculty with closing the loop (continuous improvement of curricula, instruction, and the assessment process). This committee further helps the SLC review strengths and weaknesses by identifying particularly strong assessment projects that warranted some recognition, while also noting projects or programs that might be struggling and in need of support. The reviewing committee generated a form to provide the chairs feedback on their assessment process and report; this feedback not only includes individual feedback on assessment activities but it also shares assessment ideas between faculty.

- **Envoys:**
  We have established a team of "Envoys" from the SLC who take "listening tours" to talk to faculty in academic departments across the college in order to gather feedback and to determine better ways to offer support and refine our processes. Envoys assist in building a culture of assessment by learning what people know about assessment and what is needed to be more active in the assessment dialog.

- **Institutional Outcomes:**
  CCD developed of a set of Institutional Outcomes that reflect our collective vision of the traits, skills, habits of mind, or qualities that we feel all CCD graduates should possess.
    - Effective and Ethical User of Technology
    - Complex Thinker
    - Effective Communicator
    - Globally Aware
    - Personally Responsible
    - Numeric Thinker

This process was done by conducting extensive research and by gathering broad stakeholder input, including: holding focus groups from all sectors of the college, sending out surveys to faculty and staff, gaining input from external partners, and a literature review of best practices from across the nation.

These outcomes have been designated the primary student learning outcomes for our general education degrees (AA/AS), AAS degrees and certificates. They are marketed college-wide (e.g., posters in classrooms and offices, regular scrolling on digital info displays, etc.). Each instructor has listed them on all college syllabi, further detailing specific ways in which some, or all, of these outcomes are being addressed in their courses. To educate faculty about the institutional outcomes and to get them excited about the prospect of incorporating them into our culture at CCD, the Teaching and Learning Center created a Zombie movie that illustrated the institutional outcome, Personal Responsibility. Institutional outcomes create a framework or a common goal for all of us at CCD to work towards, no matter what level of assessment we are working on.

- **Fostering a culture of assessment and learning outcomes:**
  Assessment Day gatherings are a regular feature each semester. Typically, these are half a day mini-conferences, targeting topics for both newcomers and those whose understanding of assessment has become increasingly sophisticated. These conferences are faculty-run and, therefore, conference time is partly spent listening to faculty speakers who are selected based on the assessment projects the SLC Review Committee deemed outstanding or interesting. These faculty members discuss their assessment experiences. Each conference also has breakout sessions, where processes are clarified and hands-on activities are available. The goal of the conferences is to have faculty teaching faculty about the ups and downs of assessment, while creating a space of learning that also relieves fear and misconceptions about assessment. We are growing the culture of assessment together as a group.

- **Program Assessment Strategies:**
  This is a new, two-phase strategy that asks all programs (defined primarily as degree programs) in both CTE and General Education to develop a set of Program Student Learning Outcomes. We are currently half day training this summer that is program/Center specific to teach chairs the process of program level assessment.

- **New Hire Orientation:**
  In CCD's new faculty hire orientation (for all the full-time and part-time faculty) is a module on assessment at CCD. This module includes a power point of information and members of the SLC committee serve as "guest lecturers" on the discussion board. This works to ensure that assessment is a familiar topic to every faculty member beginning a career at CCD.

- **The Program Level Assessment Guidebook:**
  The guidebook is a resource that provides general background on assessment at CCD and guiding principles, including practical steps and basic processes, for conducting and reporting on course, program and institutional learning outcomes. The assessment handbook is for those who want to create an assessment project or novices new to assessment.

# PROGRAM-LEVEL ASSESSMENT

## • What is program-level assessment?

***Program assessment focuses on assessing student learning to determine whether students have acquired the skills, knowledge, and competencies associated with their program of study.***

The results from an assessment process should provide information that can be used to determine whether or not intended outcomes are being achieved and how the program can be improved. An assessment process should also be designed to inform program faculty and other stakeholders about relevant issues that can impact the program and student learning.

- **Effective program assessment helps you answer three questions:**
  1. What is your program trying to do?
  2. How well is your program doing it?
  3. How (using the answers to 1. and 2.) can you improve your program to meet your mission?

## • What are the steps to effective program assessment?

Ultimately, you will tailor your program assessment approach to respond to your program's mission and **Program Student Learning Outcomes (PSLOs)**. To develop an effective program assessment plan, your program should consider completing the following steps:

- ☐ ***Agree on your mission***
- ☐ ***Create Program Student Learning Outcomes (PSLOs) and processes***
- ☐ ***Identify appropriate assessment methods***
- ☐ ***Develop a plan for collecting data***
- ☐ ***Set a timeline and milestones***
- ☐ ***Implement an assessment plan***
- ☐ ***Communicate results***
- ☐ ***Use data to improve processes—closing the loop!***

## • Designing your Program-Level Assessment Plan

The result of your assessment design will be an effective and workable assessment plan and document that you can distribute both inside and outside your program. The table below outlines the six steps addressed in this guidebook that will walk you through how design your program level assessment.

| | |
|---|---|
| **1) Develop your PSLOs** | • What learning experiences will students be exposed to in order to achieve these Program Level Student Learning Outcomes? |
| **2) Taking Inventory** | • Where in the curriculum are your learning outcomes being met?<br>• What kinds of assessment are already taking place in the program? |
| **3) Assessment Strategies and Methods** | • By what measure(s) will you know that students are meeting PSLOs?<br>• From whom, and at what points, will you gather data?<br>• How will the information be collected? |
| **4) Assessment Plan** | • When will you conduct the assessment?<br>• Who will be responsible for each component?<br>• What is the overall timeline for the assessment plan? |
| **5) Analysis, Reports and Closing the Loop** | • What did you find out? How do the data support these findings?<br>• Based on your findings, what do you plan to do next? |

# 1. Developing Your PSLOs:

PSLOs describe learning outcomes (what you want students to learn). PSLOs can range from varying degrees of general terms (e.g., effective communicator, complex thinker, etc.) to specific skills, values, and attitudes that students should exhibit (e.g., for students in a freshman writing course, this might be "students are able to develop a cogent argument to support a position").

## *Noteworthy!

General Education Programs can use CCD's Institutional Outcomes as their Program Student Learning Outcomes (PSLOs). However, your program is more than welcome to design separate and specific PSLOs meaningful to your Program. For help on writing your own PSLOs, see *"Where to START?"* below. If you will use CCD's Institutional Outcomes as your PSLOs, then skip to page four (4) of this guide.

- ## *Where to START?*

  Let's say your program wants to design your own PSLOs, where do you start? Begin by trying one (or some) of the following activities to help you determine your program's outcomes:

  - **Have open discussions on the following topics (or similar topics):**
    Describe the ideal student in your program at various phases throughout the program. Be concrete and focus on those strengths, skills and values that you feel are the result of, or at least supported and nurtured by, the program experience. Focus on:
    - What does this ideal student know?
    - What can this ideal student do?
    - What does this ideal student care about?
    - Describe the program experiences that contribute most to developing this ideal student.
    - List the achievements you implicitly expect of graduates in each major field.
    - Describe your alumni in terms of such achievements as career accomplishments, lifestyles, citizenship activities, and aesthetic and intellectual involvement
  - **Collect and review instructional materials:**
    Try sorting materials by the type of learning each one is designed to promote: recognition/recall, comprehension/simple application, critical thinking/problem solving. While so doing, reference syllabi and course outlines, course assignments/projects/assessments and textbooks.
  - **Collect and review documents describing your program:**
    • Brochures/catalogue descriptions • Mission statements • Curriculum forms/reports
  - **Use the 25% problem to refine or reduce a set of goal statements:**
    Imagine you want to reduce program/course material by 25%, what goals would you keep and which would you discard?
  - **Generate consensus:**
    Choose an impartial facilitator to mediate a panel discussion about possible program goals. In a brainstorming session, ask each panel member to build a list of criteria that he or she thinks is important for program goals. For each criterion, have each member anonymously rank it as:

    • 1-very important, 2-somewhat important, or 3-not important

    Place the criteria in rank order and show the anonymous results to the panel. Discuss possible reasons for items with high standard deviations. Repeat the ranking process among the panelists until the panel can reach consensus. The objective is to reach consensus before writing goals and outcomes.

- How do you write PSLOs?

## Kinds of PSLOs:

1) Cognitive outcomes…… "What do you want your graduates to know?"
2) Affective outcomes…… "What do you want your graduates to think or care about?"
3) Behavioral outcomes……..... "What do you want your graduates to be able to do?

- PSLOs need to include specific student performance and behaviors that demonstrate student learning and skill development. Before drafting your PSLOs, it might be helpful to consider these three questions, which focus on outcomes in slightly different ways:
    - *For each of your stated PSLOs, what are the specific student behaviors, skills, or abilities that would tell you this outcome is being achieved?*
    - *What would a skeptic need (evidence, behavior, etc.), in order to see that your students are achieving the outcomes you have set out for them?*
    - *In your experience, what evidence tells you when students have attained these outcomes—how do you know when they are "getting" it?*

  When writing program outcomes, describe realistic and achievable outcomes in simple language. Even if a learning outcome that is important to you seems difficult to measure, try to use language that focuses on student behavior.
    - *Effectively worded outcomes:*
        - Use action verbs that describe definite, observable actions
        - Include a description under the action taking place: "when given x, the student will be able to…"
        - Indicate an appropriate level of competency that is assessable through one or more indicators
    - Program outcomes should be accepted and supported by members of the program. Developing appropriate and useful outcomes is an iterative process; it is not unusual to go back a number of times to refine them. In most cases, it is only when you try to develop assessment techniques for program outcomes that the need for refining them becomes apparent.
    - Use concrete verbs, not vague or passive verbs. Look to those listed in the table below as examples.

| **Knowledge** | **Comprehension** | **Application** | **Analysis** | **Synthesis** | **Evaluation** |
|---|---|---|---|---|---|
| define | classify | apply | analyze | arrange | appraise |
| identify | describe | compute | calculate | assemble | assess |
| indicate | discuss | construct | categorize | collect | choose |
| know | explain | demonstrate | compare | compose | compare |
| label | express | dramatize | contrast | construct | contrast |
| list | identify | employ | criticize | create | decide |
| memorize | locate | give examples | debate | design | estimate |
| name | paraphrase | illustrate | determine | formulate | evaluate |
| recall | recognize | interpret | diagram | manage | grade |
| record | report | investigate | differentiate | organize | judge |
| relate | restate | organize | distinguish | perform | measure |
| repeat | review | practice | examine | plan | rate |
| select | suggest | predict | experiment | prepare | revise |
| underline | summarize | schedule | inspect | produce | score |
| | tell | shop | inventory | propose | select |
| | translate | sketch | question | set-up | value |
| | | translate | relate | | |

## Examples of PSLOs:

- *Students should demonstrate a critical understanding of the habits of mind used in the field of psychology.*
- *Students will define important concepts and evaluate methods in the sciences.*
- *Students will contrast higher-order objectives (i.e. problem solving skills) in the discipline.*
- *Students will appraise useful techniques to functioning as a professional in their field of study.*

# 2. Take Inventory! What is already in place?

The most effective program assessment plan is one that is closely linked to your curriculum and that uses available information and resources to the greatest degree possible. Before designing additional assessment components, it is important to *map ways the current curriculum matches the learning outcomes you have identified*, and *inventory what assessment-related information/processes are already in place that you can draw upon.*

## *Incorporating Course-Level Assessment

Most programs are doing some form of course level assessment! Any ongoing course-level assessment efforts should be noted when you take inventory. Do not forget to link any course-level assessment projects to your Program level assessment plan and timeline. Use the **Curriculum Mapping Matrix** to help you determine how your Course-level assessment projects also help you to evaluate your PSLOs. page.

- ## Curriculum Mapping: Linking goals/outcomes to curriculum

  Curriculum mapping makes it possible to identify where within the current curriculum your PSLOs are addressed. Below is an example of a matrix that might be helpful to you in identifying links between intended outcomes and curricular processes. Along the top of the matrix, list all the courses and other relevant requirements/options within the program or for the degree/certificate. Along the side, list your PSLOs. Then indicate which of the outcomes are addressed in each of the requirements/options (you can also identify in which courses these outcomes are Introduced, Emphasized, Utilized, and Currently Formally Assessed*).

  ### *Current Assessment Practices

  Instructors and programs are already assessing student learning through a variety of methods, though it may not be called "assessment." Some have been conducting course-level assessment projects and most CTE Programs (Career and Technical Programs) annually assess their programs.

### Example Curriculum Mapping Matrix: Linking Outcomes to the Curriculum

**Key**
I = Introduced
E = Emphasized
U = Utilized
A = Currently Formally Assessed

| **Program Name: Visual Arts** | **Course Numbers/Program Requirements or Options** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Outcomes** | **ART 110** | **ART 111** | **ART 112** | **ART 121** | **ART 131** | **ART 132** | **ART 139** | **ART 151** | **ART 221** |
| **Numeric Thinker** | I | I | I | I | E | I | E | U | U |
| **Personally Responsible** | E | U | A | U | U | U | U | U | U |
| **Globally Aware** | I | E | E | I | I | E | E | E | E |
| **Effective Communicator** | I | E | A | E | E | E | E | E | E |
| **Complex Thinker** | I | U | A | E | U | U | U | U | U |
| **Effective/Ethical User of Technology** | I | U | U | I | I | I | U | I | I |

* Taking inventory can also serve as a catalyst for discussions about the link between the proper sequencing of courses, the degree to which the curriculum supports student learning, and the extent to which core objectives are appropriately addressed within the curriculum. This may also help you to identify key program components particularly in need of assessment. Consider the following when having these informal discussions:

- ***What processes (e.g., courses/activities) under your control contribute to meeting your PSLOs?***
- ***Are there processes that do not contribute to your goals?***
- ***Are there processes in which you should be engaged to attain your goals?***
- ***Are there resources not under the control of your program that could assist you in improving student learning (e.g., activities, library holdings, support services for students, services in the community)?***

# 3. Assessment Strategies and Methods

This section will help you identify the strategies and methods you will use to collect assessment data as part of your program's assessment by:

1) Offering guidelines for selecting assessment methods (*See **Appendix B: Glossary of 20 Helpful Assessment Methods** for ideas on Assessment Methods/Measures)
2) Selecting methods that best meet your program's needs
3) Describing ways to link your outcomes, methods, and results.

***If you are stuck, remember that the Office of Institutional Research and Planning (CHR suite 223) can provide additional resources, connect you to other faculty and departments who have worked through this process, or can assist you directly with specific concerns or assessment needs.***

## • Guidelines for Selecting Assessment Methods:

Each program will select and develop assessment methods that are appropriate to their PSLOs (i.e., methods that will provide the most useful and relevant information for the purposes that faculty in the program have identified). Not all methods work for all programs or are appropriate to all reasons for assessment. Below are some general guidelines for selecting assessment methods:

1. ***The evidence you collect depends on the questions you want to answer.*** Use these assessment questions to guide your method selection and to help you to define your data collection priorities.
   - Does the program meet or exceed certain standards?
   - How does the program compare to others?
   - Does the program do a good job at what it sets out to do?
   - How can the program experience be improved?

2. ***Use multiple methods to assess each learning outcome.*** Many outcomes will be difficult to assess using only one measure. The advantages to using more than one method include:
   - Multiple measures can assess different components of a complex task
   - Designing a complicated all-purpose method often makes data difficult to analyze.
   - Use several assessment methods to achieve greater accuracy/validity and produce similar findings
   - Providing an opportunity to pursue further inquiry if/when methods contradict each other

   When considering which of multiple methods to use, keep the following in mind:
   - ***Include both direct and indirect measures.*** Direct methods ask students to demonstrate their learning while indirect methods ask them to reflect on their learning. Direct methods include some objective tests, essays, presentations and classroom assignments. Indirect methods include surveys and interviews.
   - ***Include qualitative as well as quantitative measures.*** All assessment measures do not have to involve quantitative measurement. A combination of qualitative and quantitative methods can offer the most effective way to assess goals and outcomes. Use an assessment method that matches your program's culture. For example, in a program where qualitative inquiry is particularly valued, these types of methods should be incorporated into the plan. The data you collect must have meaning and value to those who will be asked to make changes based on the findings.

| **Qualitative measures** rely on descriptions rather than numbers. | **Quantitative measures** collect and analyze numeric data using statistical techniques. |
|---|---|

3. ***Choose assessment methods that allow you to assess the strengths and weaknesses of the program.*** Effective methods of assessment provide feedback on a program's strengths and challenges. Finding out what is working well is only one goal of program assessment.

4. ***Be selective about what you choose to observe or measure.*** Assessment methods should be selected as carefully as you selected your PSLO's. When doing so, remember that:
   - Comprehensive does not mean assessing everything

- Choose assessable indicators of effectiveness
- Complex methods are not necessarily the best choice
- Select a manageable number of methods that do not drain energy or resources

5. ***Include passive as well as active methods of assessment.*** In addition to assessment methods that require you to interact directly with the student in an instructional or evaluative setting, assessment measures are also available that allow you to analyze assessment information without direct student contact or effort. Generally, this information can be acquired by working with Institutional Research. You can accomplish this goal by analyzing:
   - Student database information
   - Attendance/course selection patterns
   - Employer and faculty survey results
   - Transcript analyses

6. ***Use capstone courses, projects, or portfolios to directly assess PSLOs.*** Capstone courses and senior assignments promote faculty-student interaction and scholarly inquiry; they allow demonstration of academic breadth; and they allow students to demonstrate their ability to synthesize and integrate knowledge and experiences. If you use this method, however, care should be taken that:
   - The course and its assignments are truly representative of requirements for the degree/certificate
   - The course curriculum and assignment evaluation (or products) are consistent across sections
   - Students understand the value and importance of the capstone course or senior assignment and take this requirement seriously

7. ***Enlist the assistance of assessment and testing specialists when you plan to create, adapt, or revise assessment instruments.*** Staff in the Institutional Research and Planning Office (CHR suite 223) are there to help you in finding the appropriate resources. Areas in which you might want to seek assistance include:
   - Ensuring validity and reliability of test instruments AND qualitative methods
   - Identifying and designing appropriate assessment measurements for specific PSLOs
   - Analyzing/interpreting quantitative and qualitative data collected as part of your assessment plan.

8. ***Use established accreditation criteria to design your assessment program.***
   Established criteria will help you to:
   - Respond more effectively to accreditation requirements
   - Build on the techniques and measures that you use as part of the accreditation process

***9. Reach out to your Student Learning Committee (SLC) Representatives.***
   - Contact your center Dean to find out information on your representatives.

# • Which assessment methods best meet your needs?

With the above information in mind, move forward by selecting an assessment method that best meets your programs needs. For an overview of 20 different assessment methods, see the **Glossary of Helpful Assessment Methods** at the end of this guidebook. This is a useful resource to explore an array of popular program-level assessment methods. As you consider which methods might be most appropriate for your program culture and your assessment questions, it could be helpful to both reference the **Criteria Matrix** and the **Learning Outcomes Matrix** (examples below***).*** *For a more detailed explanation of the decision making process when choosing your assessment method, please see the examples provided in Appendix C.*

- The **Criteria Matrix** allows you to evaluate the *appropriateness of the methods you are considering based on criteria of importance to the program*. Note: in this example, the criteria important to the program are listed in the first column and the methods under consideration are in the first row. Use checks, plusses and minuses to indicate the degree to which the method is an effective way to measure the central criteria.
- In the **Learning Outcomes Matrix** example, the learning outcomes under consideration are listed in the first column and methods are outlined in the top row. Completing this matrix will help you link your PSLOs to specific measures that can be used to assess these outcomes. Think about whether each measure is adequate, valuable, or not an effective tool in the appropriate column.

## • Assessment Method Criteria Matrix

**Key**
✓ = Adequate tool
\+ = Valuable tool
− = Not an effective tool for criterion

| **Criteria of value to program**<br><br>*See above section on Selecting and Developing your Assessment Strategy for Criteria Guides | **Program Name: Visual Arts**<br>**Measures**<br>*See the **Glossary of 20 Helpful Assessment Methods** for ideas on Assessment Methods/Measures. | | | | |
|---|---|---|---|---|---|
| | **Course Embedded Assessment-Essays/Presentation** | **Focus Groups** | **Institutional Data** | **Student Surveys** | **Curriculum Analysis** |
| **Aligns with Curriculum** | + | + | − | −/✓ | + |
| **Aligns with PSLOs** | + | + | ✓ | ✓ | + |
| **Reasonable Planning Time** | ✓ | ✓ | + | + | − |
| **Reasonable Analysis Time/Cost** | −/✓ | −/✓ | + | + | −/✓ |
| **Value to Student Learning** | ✓ | + | − | − | ✓ |

## • Learning Outcomes by Measures Matrix

**Key**
✓ = Adequate tool
\+ = Valuable tool
− = Not an effective tool for criterion

| **PSLOs**<br>*See the Curriculum Mapping Matrix and Part 1 of this Guidebook | **Program Name: Visual Arts**<br>**Measures**<br>*See the **Glossary of 20 Helpful Assessment Methods** for ideas on Assessment Methods/Measures. | | | | |
|---|---|---|---|---|---|
| | **Course Embedded Assessment-Essays/Presentation** | **Focus Groups** | **Institutional Data** | **Student Surveys** | **Curriculum Analysis** |
| **Numeric Thinker** | − | − | − | − | ✓/+ |
| **Personally Responsible** | ✓ | + | + | ✓ | ✓/+ |
| **Globally Aware** | ✓/+ | + | − | − | ✓/+ |
| **Effective Communicator** | + | + | − | − | ✓/+ |
| **Complex Thinker** | ✓/+ | + | − | − | ✓/+ |
| **Effective/Ethical User of Technology** | − | − | ✓ | −/✓ | ✓/+ |

# 4. Formalizing your Assessment Plan

After you have **identified the outcomes** you will assess and have **determined one or more assessment methods to collect your data**, you will want to **formalize an assessment plan and timeline**. The following matrices provide you a variety of ways that you can link your PSLOs with assessment methods, outline assessment outcomes and methodology, and mark out a timeline and a breakdown of responsibilities. You can choose to use one or more matrices when formalizing your assessment plan and, as always, feel free to modify/edit. In addition, remember that you can choose more than one methodology for your program assessment (as noted in the previous section, **Guidelines for Selecting Assessment Methods**). Also note that all data do not have to be collected every year as there will probably be minimal that changes, unless you made substantial changes in your program, curriculum, or delivery system. The remainder of this section provides you with the following information:

A. A sample matrix to help you link your PSLOs with assessment methods and reports/use,
B. A sample matrix to help you determine who will create, conduct, analyze, and report the assessment,
C. A sample time-line and breakdown of responsibilities for implementation, and
D. A sample qualitative form to help you conceptualize/formalize your assessment plan.

## A. Example of Linking PSLOs, Assessment Methods, and Reports/Use

| **Which PSLO(s) will you assess?** | **Assessment Measure (How will you assess it?)** | **Population (Whom will you assess?)** | **Reporting/Use** |
|---|---|---|---|
| Students will demonstrate personal responsibility | 1. Course-embedded essay questions/oral presentations | 1. All students enrolled in identified courses. | • CCD's Program-level report<br>• Departmental review of results<br>• Revise program curriculum and/or instruction as determined |
| | 2. Focus Groups/Survey | 2. A sample population of students at different parts of the program | |
| Students can effectively communicate content knowledge | 1. Course-embedded essay questions/oral presentations | 1. All students enrolled in identified courses. | • Departmental review of results<br>• Revise Curriculum and/or Instruction as determined |
| | 2. Curriculum Analysis | 2. All identified courses. | |
| | 3. Focus Groups/Survey | 3. A sample student population in different parts of the program | |

## B. Sample Assessment Process Matrix

| Assessment Process | What | Who will conduct it? | When |
|---|---|---|---|
| **Preparation** | | | |
| | Discuss/Complete PLSOs | All FT Faculty in the Program | Fall, Year ONE |
| | Curriculum Mapping | | Fall, Year ONE |
| | Develop Assessment Strategies and Four Year Plan *The length of plan may vary depending on the program | | Spring, Year ONE |
| **Data Collection** | | | |
| | 1) Course Embedded Assessment-Essays/Oral Presentations | All FT Faculty in the Program | Annually |
| | 2) Curriculum Analysis | All FT Faculty in the Program *invite all adjuncts | Year THREE, then again every 5 years. |
| | 3) Focus Groups | Volunteer/Assigned Faculty | Starting year FOUR, annually |
| **Analysis** | | | |
| | 1) Course Embedded Assessment-Essays/Oral Presentations | 2 "readers" per course | Annually |
| | 2) Curriculum Analysis | Department Chair and committee of FT faculty | Year THREE |
| | 3) Focus Groups | Department Chair and 1 FT faculty | Starting year FOUR |
| **Reporting/Use** | | | |
| | 1) Program Review of results | All FT faculty *invite Adjuncts | Annually |
| | 2) Revise PSLOs, Curriculum and/or Instruction, Assessment protocol as determined | All FT faculty | Annually |
| | 3) Course-level Report | Department Chair with the assistance of 1 FT faculty | Annually |
| | 4) Program-level Report | Department Chair | Every 4 years |

## C. Sample Timeline

| | Fall Semester (beg.) | Fall Semester (end) | Spring Semester (beg.) | Spring Semester (end) |
|---|---|---|---|---|
| **Year One** | | | | |
| Preparation | • Departmental Discussions regarding PSLOs | • Complete PSLO Statements | • Map Outcomes to Current Curriculum | • Develop Assessment Strategies and 4 Year Plan |
| **Year Two** | | | | |
| Data Collection | | • Course Embedded Assessment-Essays/Oral Presentations | | |
| Analysis | | | • Course Embedded Assessment-Essays/Oral Presentations | |
| Reporting/Use | | | | • Course-level assessment report(s). |
| **Year Three** | | | | |
| Data Collection | • Curriculum Analysis | • Course Embedded Assessment-Essays/Oral Presentations | | |
| Analysis | | | • Course Embedded Assessment-Essays/Oral Presentations<br>• Department completes Curriculum Analysis | |
| Reporting/Use | • Departmental Discussions/Review of Results of Assessment from Spring year two | | • Revise PSLOs, Curriculum and/or Instruction, Assessment protocol as determined | • Course-level assessment report(s).<br>• Program discusses/reviews results of Curriculum analysis |
| **Year Four** | | | | |
| Data Collection | | • Course Embedded Assessment-Essays/Oral Presentations<br>• Design Focus Group Questions | • Course Embedded Assessment-Essays/Oral Presentations<br>• Conduct Focus Groups | |
| Analysis | | | | • Course-level assessment report(s).<br>• Analyze Focus Groups |
| Reporting/Use | | | • Revise PSLOs, Curriculum and/or Instruction, Assessment protocol as determined | • Complete Program-Level Assessment Report<br>• Plan to modify 4 year plan in the fall. |

# D. Sample Assessment Plan:

***1. PSLOs to focus on for the next 4 years:***

- **Personally Responsible**: Students will incorporate ethical reasoning into action; they will explore and articulate the values of professionalism in personal decision-making. They exemplify dependability, honesty, trustworthiness, and accept personal accountability for their choices and actions. Students will exhibit self-reliant behaviors, including: managing time effectively, accepting supervision and direction as needed, perseverance, valuing contributions of others, and holding themselves accountable for obligations.
- **Effective Communicator**. Students will convey meaning by writing and speaking coherently and effectively in a way that others understand; students will write and speak after reflection; students will influence others through writing, speaking, or artistic expression that is appropriate for the context and audience; students will use appropriate syntax and grammar; students will listen attentively to others and respond appropriately. Students will understand and apply conventions of effective written and oral communication in academic, public, and professional discourse.

***2. What will you assess?:***

- Student Knowledge/Preparedness: We want to evaluate students' ability to effectively communicate with others as well as their ability to assume responsibility in the process of completing the essay/oral presentation(s).
- Curriculum Quality: We need to track what is being taught where/when in order to provide assurance that specific learning goals and outcomes are being covered in the program and to pinpoint areas where additional coverage is needed.
- Student Perceptions: We need to better understand students' perceptions of their experiences, attitudes, views and suggestions about the program.

***3. Assessment Methods***

- Student Knowledge/Preparedness: We will use course-embedded essay questions/oral presentations.
- Curriculum Quality: We will conduct a curriculum analysis.
- Student Perceptions: Focus groups with students and faculty. This may be in conjunction with a survey.

***4. Time Frame***

- Student Knowledge/Preparedness: Course-embedded essay questions/oral presentations will be analyzed annually.
- Curriculum Quality: We will add curriculum analysis to the third year of program-level assessment. It will be conducted over the course of the academic year and will be revisited in another 5 years, if needed.
- Student Perceptions: Focus groups/surveys with students and faculty will be conducted annually.

***5. Who Will Do the Assessment?***

- Student Knowledge/Preparedness: Assignments will be read and evaluated independently by at least two faculty members and ranked using pre-designed and agreed upon rubrics.
- Curriculum Quality: The Department Chair or Program Coordinator will lead this analysis. He/she will ask at least two full time faculty to serve on a committee to help him/her evaluate the current curriculum.
- Student Perceptions: Focus groups will be conducted and assessed by the Department Chair and at least one full time faculty to help evaluate the findings.

***6. Type of Feedback.***

At the end of each evaluation faculty will submit their results, data will be compiled and areas of strength/weakness will be identified.

***7. Closing the Loop***

The department will meet as a whole to discuss findings and will make a recommendation to the Chair for improving curricula based on the assessment. Future assessment plans will be discussed at that time.

# 5. Analysis, Reports, and Closing the Loop

This section discusses what to consider as you analyze and interpret assessment data. It will also walk you through the process of completing an assessment report, distributing and sharing the results, and closing the loop.

## • How do you approach data analysis and interpretation?

The assessment method(s) you employ will largely drive your approach to data analysis and interpretation. Given that programs will choose from an array of methods (i.e., surveys, focus groups, curriculum analysis, and embedded test questions to name a few), this section can only provide general advise regarding the analysis and interpretation of your data. If you want additional, more pointed, advice on data analysis and interpretation you can contact the Institutional Research and Planning Office (CHR suite 223).

## *Noteworthy!

Assessment data can offer useful insight into department and program effectiveness when carefully analyzed and interpreted in the context in which it was collected—for overall program improvement. Data are misleading, and even threatening, when they are used for purposes other than originally intended and agreed upon. For example, data from assessment of student performance in a capstone course should be used to identify areas of strengths and weaknesses in student learning across the students' entire experience in the program. In this way, these data guide curricular modifications and departmental pedagogical strategies. These data should not be used to evaluate the performance of the capstone course instructor.

## • Tips for Analyzing and Interpreting your Data

- **Think about your method of analysis prior to collecting your data**
  - Look it up, read blogs about it, ask another professor, or call/email your friendly Institutional Research and Planning office (CHR suite 223)! Work to ensure that your data are compatible with your desired methodology. Doing so will save you a lot of headaches later.

- **Check assumptions before you analyze your data**
  - Making assumptions can cause some strange outcomes in the data that can then lead you to try and explain the strange finding(s), which may not be valid.
  - Don't make assumptions about your sample size. Contact CCD's Institutional Research and Planning Office (CHR suite 223) to ensure that you have a statistically significant sample size.

- **Pay attention to validity and reliability**
  - Validity refers to how well an assessment tool measures what it is purported to measure.
  - Reliability is the degree to which an assessment tool produces stable and consistent results.

- **Take steps to ensure inter-rater reliability**
  - Inter-rater reliability indicates how consistent your analysis is likely to be if the assessment is analyzed by two or more readers/raters. Familiarize yourself with an array of strategies that will help ensure consistency of terms and measures between your readers/raters.

- **Try to Remember that there is NO SUCH THING AS "BAD RESULTS"**
  - While easier said than done, keeping this in mind will save you a lot of work trying to "rationalize" a finding later or trying to make a result "fit" with your preconceived notion of the results.
  - Be cautious of reading "too much" information from your data—keep your analysis and interpretation focused on the PSLOs you set out to assess.

- # Preparing your Assessment Report and Closing the Loop!

After you have analyzed and interpreted your data, you will need to reflect on your findings as well as the assessment process and, then, write up your report. While CCD provides you with a standard form to complete, the following tips may be helpful to consider:

**Link results to original PSLOs**

Report your results in the context of your original outcomes to most effectively demonstrate the ways your assessment project(s) effect your program. Assessment results mean little if your audience does not understand what it was you were trying to assess in the first place. Successful completion of assessing your PSLOs should be showcased. You can also use this opportunity to show how you plan to address program areas that still need work. In this way, even less-desirable results can be used to the program's advantage by telling your audience what steps you will take for improvement.

**The audience**

Keep in mind that the CCD assessment report has been designed for a variety of primary and secondary uses and audiences—those most relevant (or common) and those less obvious (or pressing) can include:

- ***Primary audiences/uses:***
  - Accreditation reports and reviews
  - General education review/improvement
  - Curriculum review (faculty-based or department-based)
  - Requests to a curriculum committee (college/institutional level)
- ***Secondary audiences/uses:***
  - Recruiting
  - Alumni newsletter
  - Publications/sharing with other institutions
  - Career services
  - Securing grants

**Tone and verbiage**

Given the audience(s) for the report, the information included therein should be clear and succinct. Of primary concern is that CCD is able to demonstrate to our accreditation body program-level assessment plans and outcomes. Given the report's qualitative nature, it is important to keep the tone professional and the verbiage informative. As such, this is not the forum in which to journal your feelings about the college, the program, or assessment. Rather, focus on detailing your program level assessment projects and findings using uncomplicated and concise verbiage.

**Closing the Loop.**

The last question on the Program-Level Assessment Report asks you to consider how your results will affect what you do with your program's curriculum and/or with program requirements. This is an extremely important part of making assessment meaningful and it encourages you to make changes to improve your program and, overall, student learning. Failure to take action in response to your assessment results is not "closing the loop" and is, therefore, an incomplete assessment. Your program may take action by concluding that student performance, with respect to a learning outcome, requires a major curriculum change. Other actions may include adding prerequisites, increasing or changing specific assignments in an existing course, and providing support structures such as tutoring sessions. Another action could be to reevaluate whether the PSLOs evaluated are appropriate or if the assessment process effectively measured the targeted PSLOs. Whatever action is taken should be based on your assessment findings and can be re-assessed to determine if these changes have helped/hindered student learning—hence, closing the loop!

**There is a lot of help out there.**

It is important to keep in mind that you are not alone. Some programs on campus are already conducting Program-level assessment, and a number of colleges and universities across the country have implemented extensive system-wide assessment programs. There are staff and faculty on campus who specialize in assessment and data collection and analysis. See *Appendix D* for on-campus and on-line resources for getting help with this process.

- The Report

**Center/Program/Department:**

**Chair:**

**Academic year:**

1. What are the goals of your program/department?
   If your program/department does have articulated goals, what are common outcomes every student should possess when completing your specified courses?

2. Select/identify one of these outcomes:

3. How will you measure whether the students, as a group, possess this outcome upon completion of your specified courses?

4. How will you gather data?

5. Who will gather the data?

6. Who is responsible for analyzing the data?

7. How will the center/department/program communicate the outcome of the assessment to all parties?

8. Were the outcomes what were expected?

9. Will any changes be made as a result of the data received?

10. If yes, how will these changes be communicated and implemented?

11. Will you choose the same goal for assessment the next academic year?

12. How does your program assessment tie into at least one of the institutional outcomes?

# Appendix A: Example of Program Level Outcomes

The goals and outcomes that follow are examples for you to consider as you think about your own.

- **Social Sciences**
  Students who study one of the social sciences will learn that they have responsibilities to themselves, their families, peer groups, communities, and society.
  ***Outcomes:*** Students can:
  - Identify the role that cultural diversity plays in defining what it means to be a social being.
  - Identify the origins, workings, and ramifications of social/cultural change in their identity.
  - Compare the distinctive methods and perspectives of two or more social science disciplines.

- **Natural Sciences**
  Students who study the natural sciences will become critical thinkers who are able to judge scientific arguments created by others and see relationships between science and societal problems.
  ***Outcomes:*** Students can:
  - Apply scientific methodology.
  - Evaluate the validity and limitations of theories and scientific claims in experimental results.
  - Identify the relevance and application of science in everyday life.

- **Humanities**
  Students who study the humanities will begin to recognize themselves as "knowers," be self-conscious about their participation in a particular culture, and cultivate their ability to discover new knowledge for themselves.
  ***Outcomes:*** Students can:
  - Identify the contributions of the humanities to the development of the political and cultural institutions of contemporary society.
  - Analyze the meaning of major texts from both Western and non-Western cultures.
  - Apply the humanistic perspective to values, experiences, and meanings in their own lives.

*Note that the previous outcomes do not identify specific assignments for measuring the outcomes nor do they set specific levels of proficiency. Generally, those aspects of the outcomes need to be spelled out after the program has identified its methods for assessing these basic outcomes. Some examples follow:*

- **Natural Science**
  ***Outcomes:*** Students will:
  - Demonstrate an understanding of basic scientific principles *by restating the principle in their own words and giving a real-world example of the principle in action.*
  - Be able to distinguish between correct and incorrect applications of the principle *when given examples of each on an objective exam.*

- **English**
  ***Outcomes:*** Students will:
  - Write five-page essays reflecting on the work of an author of their choice that *presents a clear and well-organized argument and uses examples to support the argument.*
  - *Use the conventions of Standard Written English in all writing assignments.*

- **Education**
  ***Outcomes:*** Students will:
  - Clearly demonstrate an understanding of curriculum theory and standards by *preparing a two-page curriculum plan and providing justification from the literature for the chosen curriculum method.* `

# Appendix B: Glossary of 20 Helpful Assessment Methods

1. **Alumni Surveys**

***Description:*** Surveying program alumni can provide a wide variety of information about program satisfaction, how well students are prepared for their careers, what types of jobs or graduate degrees majors have gone on to obtain, starting salaries for graduates, and the skills that are needed to succeed in the job market or in graduate study. These surveys provide the opportunity to collect data about which areas of the program should be changed, altered, improved or expanded.

***Strengths and Weaknesses:*** Alumni surveying is usually a relatively inexpensive way to collect program data from individuals who have a vested interest in helping you improve your program as well as offering the opportunity for improving and continuing program relationships with program graduates. However, without an easily accessible and up-to-date directory of alumni, they can be difficult to locate. It also takes time to develop an effective survey and ensure an acceptable response rate.

***Additional Resources:***

- Converse, J. M. & Pressler, S. (1986). *Survey questions: Handcrafting the standardized questionnaire.* SAGE Publications.
- Dillman, D. (1978). *Mail and telephone surveys: The total design method.* New York: Wiley-Interscience Publication.
- Dyke, J. V. & Williams, G. W. (1996). Involving graduates and employers in assessment of a technology program. In Banta, T. W., Lund, J. P., Black, K. E., & Oblander, F. W. (Eds.). *Assessment in practice*, pp. 99-101. San Francisco: Jossey-Bass Publishers.
- Ewell, P. (1983). *Student outcomes questionnaires: An implementation handbook.* New York, NY: National Center for Higher Education Management Systems and the College Board.
- Labaw, P. J. (1980). *Advanced questionnaire design.* Cambridge, MA: Abt Books.
- McKenna, B. *Surveying your alumni: Guideline and 22 sample questionnaires.* Washington, DC: Council for advancement and support of education.

2. **Culminating Assignments**

***Description:*** Culminating assignments offer students the opportunity to put together the knowledge and skills they have acquired in their field of study, provide a final common experience for students, and offer faculty a way to assess student achievement across a number of discipline-specific areas. Culminating assignments are generally designed for seniors in a field to complete in the last semester before graduation. Their purpose is to integrate knowledge, concepts and skills that students are expected to have acquired in the program during the course of their study. This is obviously a curricular structure as well as an assessment technique and may consist of a single culminating course (a "capstone" course) or a small group of courses designed to measure competencies of students who are completing the program. A senior assignment is a final culminating project for graduating seniors such as a performance portfolio or a thesis that has the same integrative purpose as the capstone course.

***Strengths and Weaknesses:*** Many colleges and universities are using capstone courses to collect data on student learning in a specific field or in general education or core requirement programs. Putting together an effective and comprehensive capstone course can be a challenge, however, particularly for those programs that mesh hands-on technical skills with less easily measurable learning outcomes. Also, there is a great deal of start-up time to developing appropriate and systematic methods for assessing these or other culminating experiences. See Content Analysis and Primary Trait Analysis below for further information.

***Additional Resources:***

- Southern Illinois University website: *www.siue.edu/~deder/assess*
- Julian, F. D. (1996). The capstone course as an outcomes test for majors. Banta,
- T. W., Lund, J. P., Black, K. E., & Oblander, F. W. (Eds.). In *Assessment in practice*, pp. 79-81. San

Francisco: Jossey-Bass Publishers.

- Upcraft, M. L., Gardner, J. N., & Associates. (1989). *The freshman year experience: Helping students survive and succeed in college*. San Francisco: Jossey-Bass Publishers.

**3. Content Analysis**

***Description:*** Content analysis is a technique that looks at a group of students, such as students in a degree program, and assesses samples of written work that are produced by this group. To use content analysis to assess their writing skills, you will need a representative sample of the writing. The analysis may look at what the students actually write or at the underlying meaning of their writing. Results are generally presented in written form giving averages and examples of specific categories of outcomes (e.g., spelling errors). Primary trait analysis, which identifies important characteristics of specific assignments and assigns levels of competency to each trait, can be particularly effective in identifying student learning.

***Strengths and Weaknesses:*** Content analysis allows you to assess learning outcomes over a period of time and can be based on products that were not created for program assessment purposes. Because writing samples can be re-examined, content analysis also makes it easier to repeat portions of the study and provides an unobtrusive way to assess student learning. However, accuracy of the assessment is limited to the skill of the person(s) doing the analysis. Data is also limited by the set of written work and may not be relevant to technical skills valued by a particular field that involve hands-on performance. Using more than one analyst per document as well as concrete materials can improve the reliability of this technique.

***Additional Resource:***

- Babbie, E. (1995). *The Practice of Social Research (7th ed.)*. Belmont, CA: Wadsworth.
- Walvoord, B. E. & Anderson, V. J. (1998). *Effective grading: A tool for learning and assessment.* San Francisco: Jossey-Bass.

**4. Course-embedded Assessment**

***Description:*** Course-embedded assessment refers to methods of assessing student learning within the classroom environment, using course goals, outcomes and content to gauge the extent of the learning that is taking place. This technique generates information about what and how students are learning within the program and classroom environment, using existing information that instructors routinely collect (test performance, short answer performance, quizzes, essays, etc.) or through assessment instruments introduced into a course specifically for the purpose of measuring student learning.

***Strengths and Weaknesses:*** This method of assessment is often effective and easy to use because it builds on the curricular structure of the course and often does not require additional time for data collection since the data comes from existing assignments and course requirements. Course-embedded assessment does, however, take some preparation and analysis time and, while well documented for improving individual courses, there is less documentation on its value for program assessment.

***Additional Resources:***

- Angelo, T. A. & Cross, K. P. (1993). *Classroom assessment techniques: A Handbook for college teachers (2nd. Ed.)*. San Francisco: Jossey-Bass.
- Classroom Assessment Techniques. (1999). Center for Excellence in Learning & Teaching. *www.personal.psu.edu/celt/CATs.html*
- Palomba, C. A., & Banta, T. W. (1999). *Assessment essentials.* San Francisco: Jossey-Bass.
- Walvoord, B. E. & Anderson, V. J. (1998). *Effective grading: A tool for learning and assessment.* San Francisco: Jossey-Bass.

**5. Curriculum Analysis**

***Description:*** Curriculum analysis involves a systematic review of course syllabi, textbooks, exams, and other materials to help you clarify learning outcomes, explore differences and similarities between course sections, and/or assess the effectiveness of instructional materials. It offers a way to document which courses will cover which outcomes and helps in sequencing courses within a program. Also see Matrices.

***Strengths and Weaknesses:*** Using curriculum analysis as an assessment tool can be a valuable way of tracking what is being taught where. It can provide assurance that specific learning goals and outcomes are being covered in the program and can pinpoint areas where additional coverage is needed. This method, however, can be time-consuming, particularly in large programs with many courses and different instructors, and there may be little consistency between how learning outcomes are addressed in one course and how they are taught in another.

***Additional Resources:***

- Bers, T., Davis, D., & Taylor, W. (1996, Nov.-Dec.). Syllabus analysis: What are you teaching and telling your students? *Assessment Update (8)*, 6, pp. 1-2, 14-15.
- Diamond, R. M. (1998). *Designing and assessing courses and curricula*. San Francisco: Jossey-Bass.
- Ewell, P. T. (1997). Identifying indicators of curricular quality. In *Handbook of the undergraduate curriculum*, J. G. Gaff & J. L. Ratcliff (Eds.). San Francisco: Jossey Bass, pp. 608-627.

**6. <u>Delphi Technique</u>**

***Description:*** The Delphi technique is used to achieve consensus among differing points of view. In its original form, a team of experts, who never actually meet, are asked to comment on a particular issue or problem. Each member's response is reviewed and a consensus determined. Any member whose response falls outside of the consensus is asked to either defend or rethink the response. The anonymity provided by this technique offers more junior members of the team an equal chance to get their ideas out, as well as permitting a challenge to the ideas of senior members that might never take place in an open forum. More recently, the Delphi technique has been modified so that teams of individuals are brought together to discuss an issue or problem face-to-face and reachs a consensus at the meeting. For instance, a team of faculty members might meet to review possible goals and outcomes for their program in an effort to develop a set of goals and outcomes on which they can agree.

***Strengths and Weaknesses:*** The Delphi technique can be useful in bringing together diverse opinions in a discussion forum. This technique fails, however, when the facilitator lacks objectivity or when the participants feel unsafe or insecure in voicing their real opinions. For instance, a faculty member discussing intended goals and outcomes might not be comfortable in disagreeing with the program head. For this technique to succeed, care must be taken to appoint an impartial facilitator and to convince participants that differing opinions are welcome. Returning to the original design of this technique, with an anonymous team who never meet, might ensure more honest and open input.

***Additional Resources:***

- Armstrong, M. A. (1989). The Delphi technique. Princeton Economic Institute. *http://www.pei-intl.com/Research/MARKETS/DELPHI.HTM.*
- Cline, Alan. (2000). Prioritization Process using Delphi Technique. *www.carolla.com/wp-delph.htm.*
- Stuter, L. M. (1996). The Delphi technique: What is it? *http://www.icehouse.net/lmstuter/page0019.htm.*
- Stuter, L. M. (November 1998). Using the Delphi technique to achieve consensus. *Education Reporter (54)*.

**7. <u>Employer Surveys</u>**

***Description:*** Employer surveys help the program determine if their graduates have the necessary job skills and if there are other skills that employers particularly value that graduates are not acquiring in the program. This type of assessment method can provide information about the curriculum, programs and student outcomes that other methods cannot: on-the-job, field-specific information about the application and value of the skills that the program offers.

***Strengths and Weaknesses:*** Employer surveys provide external data that cannot be replicated on campus and can help faculty and students identify the relevance of educational programs, although, as is true in

any survey, ambiguous, poorly-worded questions will generate problematic data. Additionally, though data collected this way may provide valuable information on current opinion, responses may not provide enough detail to make decisions about specific changes in the curriculum or program. Also, it is sometimes difficult to determine who should be surveyed, and obtaining an acceptable response rate can be cost—and time—intensive.

***Additional Resources:***

- Converse, J. M. & Presser, S. (1986). *Survey questions: Handcrafting the*
- *standardized questionnaire.* Newbury Park: SAGE Publications. Dyke, J. V., & Williams, G. W. (1996).
- Involving graduates and employers in assessment of a technology program. In Banta. T. W., Lund, J. P., Black, K. E., &Oblander, F. W. (eds.) *Assessment in Practice.* San Francisco: Jossey-Bass.
- Lead Center, University of Wisconsin, Madison. (1998). Program assessment toolkit: A guide to conducting interviews and surveys.

**8. <u>Focus Groups</u>**

***Description:*** Focus groups are structured discussions among homogeneous groups of 6-10 individuals who respond to specific open-ended questions designed to collect data about the beliefs, attitudes and experiences of those in the group. This is a form of group interview where a facilitator raises the topics for discussion and collects data on the results. Emphasis is on insights and ideas.

***Strengths and Weaknesses:*** Focus groups can provide a wide variety of data about participants' experiences, attitudes, views and suggestions, and results can be easily understood and used. These groups allow a small number of individuals to discuss a specific topic in detail, in a non-threatening environment. Data collected in this way, however, is not useful for quantitative results, and qualitative data can be time-consuming and difficult to analyze because of the large amount of non-standardized information. Ultimately, the success of this method depends on a skilled, unbiased moderator and appropriate groups of participants.

***Additional Resources:***

- Lead Center, University of Wisconsin, Madison. (1998). Program assessment tool kit: A guide to conducting interviews and surveys. Morgan, D. L. (1988). *Focus groups as qualitative research.* Newbury Park:SAGE Publications.
- Morgan, D. L., & Krueger, R. A. (1997). *The focus group kit (Vols. 1-6).*Thousand Oaks, CA: SAGE Publications.

**9. <u>Institutional Data</u>**

***Description:*** A variety of program and student data are routinely collected at the university level. These data can enhance and elaborate on data you collect in the program. Institutional data can tell you whether the program is growing, what the grade point average is for students in the program, and what the retention rate is for your students.

***Strengths and Weaknesses:*** Institutional data are generally easily accessible and readily available. On the CCD campus, you can access this data through the Office of Institutional Research and Planning, located in Cherry Creek Suite 223. Student and program data are collected on a systematic and cyclical schedule that can offer you both current and longitudinal information. On the other hand, these data sets are generally large and may be difficult to sort through, particularly for those individuals who are not used to working through large databases. The data may be less useful to specific programs because the information collected is very often general (age, gender, race, etc.) and may not directly relate to program goals and outcomes.

***Additional Resources:***

- The Office of Institutional Research and Planning (CHR suite 223) can provide assistance in accessing institutional data and university-wide data sets. The Information Clearinghouse website is

*www.umass.edu/oapa/*.

**10. Matrices**

***Description:*** At its most basic, a matrix is a grid of rows and columns used to organize information. For assessment purposes, a matrix can be used to summarize the relationship between program outcomes and course syllabus outcomes, course assignments, or courses in a program or program. Matrices can be used for curriculum review, to select assessment criteria or for test planning. A matrix can also be used to compare program outcomes to employer expectations.

***Strengths and Weaknesses:*** Using a matrix can give you a good overview of how course components and curriculum link to program outcomes, can help you tailor assignments to program outcomes, and can lead to useful discussions that in turn lead to meaningful changes in courses or curricula. However, because a matrix can offer a clear picture of how program components are interconnected and can reveal where they are not, acknowledging and responding to discrepancies may involve extensive discussion, flexibility and willingness to change.

***Additional Resource:***

- Diamond, R.M. (1998). *Designing and assessing courses and curricula*. San Franciso:Jossey-Bass.Palomba, C. A., & Banta, T. W. (1999). *Assessment essentials.* San Francisco: Jossey-Bass.

**11. Observations**

***Description:*** Observation as a method of assessment is an unobtrusive tool that can yield significant information about how and why students learn. You may choose to observe any relevant interactive event, such as classes, club meetings, or social gatherings. This tool is generally used when you are interested in how students study, are concerned about the effectiveness of study sessions or other supplementary activities, or when you are focusing on the relationship between out-of-class behavior and in-class performance. Data collected through observation can be correlated with test scores and/or course grades to help provide further insight into student learning.

***Strengths and Weaknesses:*** Data collected through observation can yield important insight into student behavior that may be difficult to gauge through other assessment methods. This method is typically designed to describe findings within a particular context and often allows for interaction between the researcher and students that can add depth to the information collected. It is especially useful for studying subtleties of attitudes and behavior. Observed data, however, is not precise and cannot be generalized to larger populations. Conclusions may be suggestive rather than definitive, and others may feel that this method provides less reliable data than other collection methods.

***Additional Resources:***

- Babbie, E. (1995). *The practice of social research (7th ed.)*. Belmont, CA: Wadsworth. Palomba, C. A., & Banta, T. W. (1999). *Assessment essentials.* San Francisco: Jossey-Bass.

**12. Performance Assessment**

***Description:*** Performance assessment uses student activities to assess skills and knowledge. These activities include class assignments, auditions, recitals, projects, presentations and similar tasks. At its most effective, performance assessment is linked to the curriculum and uses real samples of student work. This type of assessment generally requires students to use critical thinking and problem-solving skills within a context relevant to their field or major. The performance is rated by faculty or qualified observers and assessment data collected. The student receives feedback on the performance and evaluation.

***Strengths and Weaknesses:*** Performance assessment can yield valuable insight into student learning and provides students with comprehensive information on improving their skills. Communication between faculty and students is often strengthened, and the opportunity for students' self-assessment is increased. Performance assessment, like all assessment methods, is based on clear statements about learning outcomes. This type of assessment is also labor-intensive, is sometimes separate from the daily routine of

faculty and student, and may be seen as an intrusion or an additional burden. Articulating the skills that will be examined and specifying the criteria for evaluation may be both time-consuming and difficult.

***Additional Resources:***

- Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques: A handbookfor college teachers.* San Francisco: Jossey-Bass. Palomba, C. A., & Banta, T. W. (1999). *Assessment essentials.* San Francisco: Jossey-Bass.

**13. Portfolio Evaluations**

***Description:*** Portfolios are collections of student work over time that are used to demonstrate student growth and achievement in identified areas. Portfolios can offer information about student learning, assess learning in general education, and evaluate targeted areas of instruction and learning. A portfolio may contain all or some of the following: research papers, process reports, tests and exams, case studies, audiotapes, videotapes, personal essays, journals, self-evaluations and computational exercises. Portfolios are often useful and sometimes required for certification, licensure, or external accreditation reviews.

***Strengths and Weaknesses:*** Portfolios not only demonstrate learning over time, but can be valuable resources when students apply to graduate school or for jobs. Portfolios also encourage students to take greater responsibility for their work and open lines of discussion between faculty and students and among faculty involved in the evaluation process. Portfolios are, however, costly and time-consuming and require extended effort on the part of both students and faculty. Also, because portfolios contain multiple samples of student work, they are difficult to assess and to store and may, in some contexts, require too much time and effort from students and faculty alike.

***Additional Resources:***

- Belanoff, P. & Belanoff, D. (1991). *Portfolios: Process and product.* Portsmouth, NH:Boynton/Cook Publishers.The Washington State University Writing Portfolio (2001).
- *http://wsu.edu/~bcondon/portpage.html.*Forrest, A. (1990). *Time will tell: Portfolio-assisted assessment of general education.*Washington, DC: AAHE Assessment Forum.

**14. Pre-test/Post-test Evaluation**

***Description:*** This method of assessment uses locally developed and administered tests and exams at the beginning and end of a course or program in order to monitor student progression and learning across pre-defined periods of time. Results can be used to identify areas of skill deficiency and to track improvement within the assigned time frame. Tests used for assessment purposes are designed to collect data that can be used along with other institutional data to describe student achievement.

***Strengths and Weaknesses:*** Pre-test/post-test evaluations can be an effective way to collect information on students when they enter and leave a particular program or course, and provide assessment data over a period of time. They can sample student knowledge quickly and allow comparisons between different students groups, or the same group over time. They do, however, require additional time to develop and administer and can pose problems for data collection and storage. Care should be taken to ensure that the tests measure what they are intended to measure over time (and that they fit with program learning outcomes) and that there is consistency in test items, administration and application of scoring standards.

***Additional Resources:***

- Berk, R. (Ed.). (1986). *Performance assessment: Methods and applications.*
- Baltimore, MD. The Johns Hopkins University Press.Gronlund, N. (1991). *Measurement and evaluation in teaching (4th ed.).*New York: MacMillan.
- Palomba, C. A., & Banta, T. W. (1999). *Assessment essentials.* San Francisco:Jossey-Bass.

**15. Reflective Essays**

***Description:*** Reflective essays may be used as an assessment tool to gauge how well students understand class content and issues. They are generally short essays (5 to 10 minutes) on topics related to the course

curriculum and may be given as in-class assignments or homework. Reflective essays may be voluntary or required, open-ended questions on surveys required in student portfolios or capstone composition courses.

***Strengths and Weaknesses:*** Reflective essays as an assessment tool can offer data on student opinions and perspectives at a particular moment in a class. Essays will provide a wide array of different responses and might lead to increased discussion among faculty and students. On the other hand, poorly worded, ambiguous questions will yield little data that is useful, and opinions and perceptions may vary in accuracy. Analysis of essay content also takes additional time and expertise.

***Additional Resource:***

- Banta, T. W., Lund, J. P., Black, K. E. & Oblander, F. W. (1996). *Assessment in practice: Putting principles to work on college campuses.* San Francisco: Jossey-Bass.

**16. Scoring Rubrics**

***Description:*** Scoring rubrics are typically grids that outline identified criteria for successfully completing an assignment or task and establish levels for meeting these criteria. Rubrics can be used to score everything from essays to performances. Holistic rubrics produce a global score for a product or performance. Primary trait analysis uses separate scoring of individual characteristics or criteria of the product or performance.

***Strengths and Weaknesses:*** Scoring rubrics allow the instructor to efficiently and consistently look at complex products or performances and to define precise outcomes and expectations. They also are easily shared with students. However, developing an effective rubric can be time-consuming and often requires ongoing edits to fine tune criteria and anticipated outcomes. Training raters to use the scoring rubrics in a consistent manner also involves a significant time commitment.

***Additional Resources:***

- Southern Illinois University: *www.siue.edu/~deder/assess*Walvoord, B. E., & Anderson, V. J. (1998). *Effective grading*. San Francisco: Jossey-Bass.White, E. M. (1994). *Teaching and assessing writing.* San Francisco: Jossey-Bass.

**17. Standardized and Local Test Instruments**

***Description:*** Selecting a standardized instrument (developed outside the institution for application to a wide group of students using national/regional norms and standards) or a locally-developed assessment tool (created within the institution or program for internal use only) depends on specific needs and available resources. Knowing what you want to measure is key to successful selection of standardized instruments, as is administering the assessment to a representative sample in order to develop local norms and standards. Locally-developed instruments can be tailored to measure specific performance expectations for a course or group of students.

***Strengths and Weaknesses:*** Locally-developed instruments are directly linked to local curriculum and can identify student performance on a set of locally-important criteria. Putting together a local tool, however, is time-consuming as is development of a scoring key/method. There is also no comparison group and performance cannot be compared to state or national norms. Standardized tests are immediately available for administration and, therefore, are less expensive to develop than creating local tests from scratch. Changes in performance can be tracked and compared to norm groups and subjectivity/misinterpretation is reduced. However, standardized measures may not link to local curricula and purchasing the tests can be expensive. Test scores may also not contain enough locally-relevant information to be useful.

***Additional Resources:***

- Jacobs, L. C., & Chase, C. you. (1992). *Developing and using tests effectively: A*
- *guide for faculty*. San Francisco: Jossey Bass.Morris, L. L., Fitz-Gibbons, C. T., Lindheim, E. (1987). *How to measure performance and use tests*. Beverly Hills: Sage.
- National Post-Secondary Education Cooperative (NPEC) Assessment Tests

- Review. *http://www.nces.gov/npec/evaltests* Ory, J., & Ryan, K. E. (1993). *Tips for improving testing and grading*. Beverly Hills: Sage Publications.

**18. Student Surveys and Exit Interviews**

***Description:*** Surveys and interviews ask students to respond to a series of questions or statements about their academic experience. Questions can be both open-ended (respondents create answers) and close-ended (respondents answer from a list of simple and unambiguous responses). Surveys and interviews can be written or oral (face-to-face) or by phone. Types of surveys include in-class questionnaires, mail questionnaires, telephone questionnaires, and interviews. Interviews include structured, in-person interviews and focus group interviews.

***Strengths and Weaknesses:*** Surveys can be relatively inexpensive and easy to administer, can reach participants over a wide area, and are best suited for short and non-sensitive topics. They can give you a sense of what is happening at a given moment in time and can be used to track opinions. Data is reasonably easy to collect and tabulate, yet the sample may not be representative of the population (particularly with a low response rate). Ambiguous, poorly written items and insufficient responses may not generate enough detail for decision making. An interview can follow-up on evasive answers and explore topics in-depth, collecting rich data, new insights, and focused details. It can, however, be difficult to reach the sample and data can be time-consuming to analyze. Information may be distorted by the respondent, who may feel a lack of privacy and anonymity. The success of the interview depends ultimately on the skills of the interviewer.

***Additional Resources:***

- Fowler, F. J. (1985). *Survey research methods.* Beverly Hills: SAGE Publications.

**19. Syllabus Analysis**

***Description:*** Syllabus analysis (as well as systematic review of textbooks, exams and other curricular material) involves looking at the current course syllabus (written or oral assignments, readings, class discussions/projects and course expectations) to determine if the course is meeting the goals and outcomes that the instructor or program has set for it.

***Strengths and Weaknesses:*** Use syllabus analysis when you want to clarify learning outcomes; explore differences and similarities between sections of a course; or assess the effectiveness of instructional materials. Syllabus analysis can provide invaluable information to enhance any assessment plan. However, this review is time consuming and, as there may be more than one reviewer, there may not be adequate consistency in collecting and analyzing the data.

***Additional Resources:***

- Bers, T., Davis, D., & Taylor, W. (1996, Nov. -Dec.). Syllabus analysis: What are
- you teaching and telling your students? *Assessment Update (8)*, 6, pp. 1-2, 14-15.Palombo et al. (2000). *Assessment workbook*. Ball State University.*http://web.bsu.edu/IRAA/AA/WB/contents.htm.*
- Walvoord, B. E., & Anderson, V. J. (1998). *Effective grading.* San Francisco:Jossey-Bass.White, E. M. (1994). *Teaching and assessing writing.* San Francisco: Jossey-Bass.

**20. Transcript Analysis**

***Description:*** Transcript analysis involves using data from student databases to explore course-taking or grade patterns of students. This tool can give you a picture of students at a certain point in their academic careers, show you what classes students took and in what order, and identify patterns in student grades. In sum, transcript analysis gives you a more complete picture of students' actual curricular experiences. Specific information can be drawn from transcripts to help answer research questions, and course pattern sequences can be examined to see if there is coherence to the order of courses taken.

***Strengths and Weaknesses:*** Transcript analysis is an unobtrusive method for data collection using an existing student database. This information can be linked to other variables such as gender or field of study,

or used to measure outcomes. It is important to keep in mind, however, that course patterns may be influenced by other variables in students' lives that do not show up on their transcripts. Also, solutions that arise from results of the analysis may not be practical or easily implemented. It is critical to have specific questions whose answers can lead to realistic change before conducting the analysis.

***Additional Resources:***


- Palomba, C. A., & Banta, T. W. (1999). *Assessment essentials.* San Francisco:
- Jossey-Bass. Ratcliff, J. L. (1992). What can you learn from coursework patterns about improving undergraduate education? In J. L. Ratcliff (Vol. Ed.), *Assessment and curriculum reform: Vol. 80. New directions for higher education* (pp. 5-22). San Francisco: Jossey-Bass.

# Appendix C: Sample Assessment Plans

## SAMPLE

**PROGRAM ASSESSMENT USING COURSE-BASED ASSESSMENT OF CLASSROOM ASSIGNMENTS**

***BA in Anthropology***

***1. PSLOs to focus on:***

- Identify trends or patterns in anthropological data;
- Formulate a testable explanation or reasonable interpretation;
- Identify data that constitute credible evidence for an explanation or interpretation;
- Identify and define a significant problem or topic in anthropology; and
- Analyze and interpret data in a systematic manner.

***2. What will you assess?***

Completion by a random sample of 15% of the senior majors of identified course assignments in selected upper division anthropology courses.

***3. Assessment Methods***

A cross-section of written work involving several formats and the department's three sub-disciplines, including take-home essays, literature critiques, midterm essay, and final exams.

***4. Time Frame***

Senior majors will take the courses proposed and will complete the identified assignments for these courses. Evaluation of the assignments will be scheduled as appropriate throughout the semester.

***5. Who Will Do the Assessment?***

Assignments will be read and evaluated independently by three faculty members other than the course instructor and ranked on a five-point scale with 5 as superior and 1 as inadequate.

***6. Type of Feedback.***

At the end of each evaluation, faculty will submit their evaluations, data will be compiled and areas of strength/weakness will be identified.

***7. Closing the Loop***

The department will meet as a whole to discuss findings and will recommend to the Chair methods for improving curricula based on the assessment.

SAMPLE

**PROGRAM ASSESSMENT USING NATIONAL STANDARDIZED EXAM**

***BS in Chemical Engineering***

***1. PSLOs to focus on:***

Students will demonstrate the ability and skill to:

- Delineate and solve in a practical way the problems of society involving molecular change;
- Implement the engineer's responsibility to protect both occupational and public health/safety;
- Maintain professional competency through lifelong learning;
- Conduct experimental investigations that combine elements of theory and practice;
- Use computational techniques to solve specific engineering problems; and
- Communicate effectively both orally and in writing.

***2. What will you assess?***

Successful completion of national standardized Fundamentals of Engineering Exam (FE) by all graduating seniors.

***3. Assessment Methods***

- Analysis of overall FE exam scores in comparison with national and state scores
- Analysis of FE exam scores by engineering major
- Analysis of course content in relation to exam subject areas and scores

***4. Type of Feedback.***

- Review of test data by faculty committees within each department of the College to determine percentages of students passing/failing the exam.
- Evaluation of College curricula and course content in relation to areas of the exam on which students receive lower scores

***5. Closing the Loop***

Data will be used to update curricula and course content to address identified problem areas. A senior design project is currently being considered to increase hands-on experience and practical application of learning.

SAMPLE

**PROGRAM ASSESSMENT USING SENIOR CAPSTONE PROJECT**

***BA in English***

***1. PSLOs to focus on:***

- Discuss a major work or author in English and/or American Literature, or compare two or more works and authors; for example, analyze the character of Satan in Milton's *Paradise Lost*.
- Analyze a novel, short story, poem, play or a significant piece of prose showing familiarity with the techniques and literary contexts of the particular genre examined.
- Show knowledge of the historical context or literary period of the work or author being examined; for example, a discussion of Crane's Maggie as an example of American Naturalism.

***2. What will you assess?***

Completion of a Senior Project consisting of a portfolio of four papers and a reflective essay demonstrating that the student has met a substantial number of the outcomes outlined above in "***Outcomes.***"

***3. Assessment Methods***

Portfolios reviewed and evaluated by departmental committee.

***4. Time Frame***

Students will take the course proposed and will prepare the portfolios before the end of the senior year. Evaluation of the portfolios will be scheduled for each quarter.

***5. Who Will Do the Assessment?***

Department Chair and appointed committee.

***6. Type of Feedback.***

At the end of each evaluation, the committee will write a report describing the strengths and weaknesses that the portfolios demonstrate.

***7. Closing the Loop***

The department will meet as a whole to discuss findings and will recommend to the Chair and curriculum committee methods of improving department procedures and curricula.

SAMPLE

**PROGRAM REVIEW USING COURSE-BASED ASSESSMENT OF EMBEDDED EXAM QUESTIONS**

***BA in Mathematics***

***1. PSLOs to focus on:***

use techniques of differentiation and integration of one and several variables;
solve problems using differentiation and integration;

-solve systems of linear equations;

give direct proofs, proofs by contradiction, and proofs by induction;
write a simple computer program

***2. What will you assess?***

Completion of embedded exam questions designed to evaluate selected knowledge and skills.

***3. Assessment Methods***

Test questions developed by a committee of faculty and embedded in the mid-term and final exams of three upper level classes: Calculus 3, Linear Algebra, and Advanced Calculus.

***4. Time Frame***

Students will take the courses proposed and will complete the mid-term and final exams for these courses. Evaluation of the exam questions will be scheduled at semester's mid-point and end.

***5. Who Will Do the Assessment?***

Members of the departmental Undergraduate Committee, independent of the course instructors, will grade questions for outcomes assessment. The Department Chair and an appointed committee will review the Undergraduate Committee's report.

***6. Type of Feedback.***

At the end of each evaluation, the committee will write a report describing the results and making recommendations for curricular revision, if appropriate.

***7. Closing the Loop***

The department will meet as a whole to discuss findings and will recommend to the Chair methods for improving curricula based on exam question assessment.

# Appendix D: Resources

This appendix offers a variety of on-campus and on-line resources to provide additional assistance as you move deeper into the assessment process. On-campus resources are given to provide you with a "real person" to contact should you have questions, concerns or need additional information or support.

## On-Campus

Office of Institutional Research and Planning
Cherry Creek Suite 223
303-352-6927
Director: Margaret Puryear
Margaret.Puryear@ccd.edu

Teaching and Learning Center (TLC)
Cheery Creek Suite 224
Associate Dean of Instruction: Kaylah Zelig
Kaylah.Zelig@ccd.edu

Student Learning Committee
Co-Chair: Erin Farb
Erin.Farb@ccd.edu
Co-Chair: Karey James
Karey.James@ccd.edu

## On-Line

On-line websites are listed to give you further opportunity to explore how assessment is being used at other large research institutions across the country. These websites are particularly useful in providing specific examples and "how-to" models as well as in sharing how the assessment experience is playing out in higher education today. References from the literature offer more in-depth discussion of handbook topics.

**American Association for Higher Education**
*www.aahe.org*
**California State University - San Bernardino**
*http://academic-affairs.csusb.edu* and *www.co.calstate.edu/aa/sloa*
**ERIC Assessment Clearinghouse**
*http://ericae.net/*
**Internet Resources for Higher Education Outcomes Assessment**
*http://www2acs.ncsu.edu/upa/assmt/resource.htm*
**Ohio University**
*www.cats.ohiou.edu/~insres/assessments/ncaplan.html*
**Penn State**
*www.psu.edu/dus/uac/assessme.htm*
**Southern Illinois University**
*www.siue.edu/~deder/assess*
**University of Cincinnati - Raymond Walters College**
*www.rwc.uc.edu/phillips/index_assess.html*
**University of Colorado - Boulder**
*www.colorado.edu/pba/outcomes*
**University of Michigan**
*www.umich.edu/~crltmich/crlt.faq.html*
**University of Nebraska**
*www.unl.edu/svcaa/priorities/assessment.html*
**University of Wisconsin - Madison**
*www.wisc.edu/provost/assess.html*
**Virginia Tech**
*http://aappc.aap.vt.edu*

## Curriculum Mapping: Linking Outcomes to the Curriculum

### Assessment Matrix: Linking Objectives to Curriculum

**Key**
I = Introduced
E = Emphasized
U = Utilized
A = Currently Formally Assessed

| **Program Name:** | **Course Numbers/Program Requirements or Options:** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Outcomes** | | | | | | | | | |
| 1) | | | | | | | | | |
| 2) | | | | | | | | | |
| 3) | | | | | | | | | |
| 4) | | | | | | | | | |
| 5) | | | | | | | | | |
| 6) | | | | | | | | | |

# Assessment Method Criteria Matrix

**Key**
✓ = Adequate tool
\+ = Valuable tool
\- = Not an effective tool for criterion

| **Criteria of value to program**<br><br>*See section on Selecting and Developing your Assessment Strategy for Criteria Guides | **Program Name:**<br><br>**Measures**<br><br>*See the **Glossary of 20 Helpful Assessment Methods** for ideas on Assessment Methods/Measures. | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | + | - | - | - | - |
| | -/✓ | - | - | - | - |
| | + | - | - | - | Not an effective tool ! |
| | ✓/+ | - | - | - | - |
| | - | - | - | - | - |

# Learning Objectives by Measures Matrix

**Key**
✓ = Adequate tool
+ = Valuable tool
− = Not an effective tool for criterion

| **PSLOs**<br>*See the Curriculum Mapping Matrix and Part 1 of this Guidebook | **Program Name:** | | | | |
|---|---|---|---|---|---|
| | **Measures**<br>*See the **Glossary of 20 Helpful Assessment Methods** for ideas on Assessment Methods/Measures. | | | | |
| | | | | | |
| | + | + | + | + | + |
| | -/✓ | -/✓ | -/✓ | -/✓ | -/✓ |
| | + | + | + | + | + |
| | ✓/+ | ✓/+ | ✓/+ | ✓/+ | ✓/+ |
| | - | - | - | - | - |
| | + | + | + | + | + |
| | ✓/+ | ✓/+ | ✓/+ | ✓/+ | ✓/+ |

## Linking PSLOs, Assessment Methods, and Reports/Use

| What PSLO(s) will you assess? | Assessment Measure (how will you assess it?) | Population (Whom will you assess?) | Reporting/Use |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## Assessment Process Matrix

| Assessment Process | What | Who will conduct it? | When |
|---|---|---|---|
| **Preparation** | | | |
| | | | |
| **Data Collection** | | | |
| | | | |
| **Analysis** | | | |
| | | | |
| **Reporting/Use** | | | |
| | | | |

## Timeline

| | Fall Semester (beg.) | Fall Semester (end) | Spring Semester (beg.) | Spring Semester (end) |
|---|---|---|---|---|
| **Year One** | | | | |
| Preparation | | | | |
| **Year Two** | | | | |
| Data Collection | | | | |
| Analysis | | | | |
| Reporting/Use | | | | |
| **Year Three** | | | | |
| | | | | |
| Analysis | | | | |
| Reporting/Use | | | | |
| **Year Four** | | | | |
| Data Collection | | | | |
| Analysis | | | | |
| Reporting/Use | | | | |