Learning Outcomes and Their Assessment: A Handbook for the development and measurement of outcomes at Mission College
This handbook was developed to assist departments and their faculty in the creation of observable, measureable Student Learning Outcomes (SLOs) and Program Learning Outcomes (PLOs). The goal is to clarify the process of outcome creation and assessment, such that all departments successfully implement a process for assessing student learning. If any questions are left unanswered, feel free to contact a member of the Outcomes and Assessment Committee for clarification.

What are Learning Outcomes?
Learning Outcomes point to the desired knowledge gained and skills acquired or enhanced as a result of taking a course or completing a degree or certificate program.

They are specific observable and measurable results that are expected of the students' abilities upon completion of a course or a program. They describe a student’s ability and skills using higher level thinking and ability to produce something that requires application of what has been learned.

What Learning Outcomes are not is a list of activities, nor do they focus on the minutiae. They are overarching descriptions of what the students will have learned. Poorly written outcomes are hard to assess. The emphasis should be on what students can do with what they have learned by producing something that allows the students to apply the knowledge and skills they have gained.

Learning Outcomes also give students a better understanding of what is expected of them. The 2014 ACCJC Accreditation Standards state that “in every class section, students receive a course syllabus that includes learning objectives from the institution’s officially approved course outline.” When the expectations are clear to both instructors and students, there is a better chance of successful acquisition of skills and knowledge.

How Do Learning Outcomes Help My Department?
For the past few decades, institutions of higher learning across the country have come to the understanding that a full commitment to teaching must include assessing what and how much students are learning, and using this information to improve the education experiences being offered. These institutions have realized that covering material does not guarantee that the students are learning it, and thus established the Learning Outcomes process to better assess the quality of the education provided.

Outcomes and their assessment are not the end goal but agents of educational improvement – the point isn’t to just collect data, check a box in the Program Review and move on, it is to provide departments with meaningful data that departments analyze to improve student learning. To highlight this process toward improving student learning, the 2014 ACCJC standards require that outcomes assessment be used in the course and program revision process.

Ultimately, Learning Outcomes and their assessment will
- Help faculty determine what is and what is not working in their courses or programs. Positive assessment results can and should be used to promote successes, market
programs and departments, and motivate faculty. Less than satisfactory assessment results should provide an opportunity for faculty to analyze results and identify improvements to courses, programs and campus services.

- Provide powerful evidence to support requests for needed resources to maintain programs or demonstrate a need for funding of projects that will boost student learning.

- Produce useful discussion among faculty who share the responsibility of a sequence of courses. Instructors of courses that are next in the progression can be assured that students have learned the necessary content knowledge.

- Provide reassurance that all faculty are teaching to the same standard of expectation, that all students have the same core knowledge base upon completion of a course or program regardless of which instructors were in the classroom.

- Help professors prioritize what course material is most beneficial to achieving the course and program outcomes.

- Demonstrate to the public the value of the college as a source of a quality education.

**Developing Learning Outcomes**

All faculty members who are or might be teaching a course should ideally participate in the development of both the Learning Outcomes and the assessment instrument(s). Their participation makes the assessment process smoother and consistent.

If having a difficulty in discerning a course's outcomes, look to the course's current assignments and ask, What knowledge or skill must be applied by students in order to complete this assignment? Articulate that knowledge or skill in the form of “Students will be able to…” and an SLO is created.

For Program Learning Outcomes, one of the more common development method is to group the SLOs from the courses that make up the core of the degree or certificate into major themes and then articulate that theme in a measureable outcome.

Both types of learning outcomes should be broad and overarching in nature, covering the main concepts explored in the course or program.

**What makes for a good Learning Outcome?**

Learning Outcomes should focus on what learning will result from the course or program, rather than be lists of activities or topics. They involve complete sentences with ‘active’ verbs – see Appendix A for language to consider and to avoid – and with terms that could be understood by the public as the basic expectation of what students should achieve as a result of the course.
Most importantly, Learning Outcomes must be measurable. That is the problem with outcomes that start with “Students will understand…”: ‘understanding’ is not easily measurable, rather the application of that understanding is.

As an exercise, compare the following two examples of Learning Outcomes; which one makes for a better outcome?

<table>
<thead>
<tr>
<th>Students will appreciate music from other cultures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>vs.</td>
</tr>
<tr>
<td>Students will identify the characteristics of music from other cultures.</td>
</tr>
</tbody>
</table>

The nebulous nature of ‘appreciation’ makes it difficult to measure, thus the first outcome is not ideal. When writing an outcome, always keep in mind what could be observed by the professor and directly measured as part of the assessment process; this will facilitate avoiding the more abstract wording of Learning Outcomes.

Simple guidelines

- Avoid vagueness in the wording. Any vagueness leads to inconsistency among instructors in their approach to measuring the outcome.

- Focus on what the students will be able to do as a result of taking that course, not on what will be taught.

- Avoid outcomes that are particular to a specific style of instruction.

- Focus on what the faculty agree are the most important aspects of the course or program.

- Avoid those outcomes that seem important, but involve concepts that cannot be directly observed and thus cannot be measured. An example of what to avoid is “Students will have knowledge of a selection of culturally diverse writings.” Knowledge is internal to the student and cannot be readily directly observed and measured.

- Focus on that particular course, even if it is part of a series of courses. Course 1A should not have the exact same SLOs as course 1B, 1C, or 1D. Likewise, SLOs should not be about the application of knowledge gained in the previous course in the series, rather what was learned in that particular course. The same is true for Programs – similar degrees can have similar PLOs, but not exactly the same ones.

As measurability is important, it may be the case that departments will have to rewrite an outcome after generating an assessment instrument, making sure that the outcome still points to the most crucial skill or information that students will need for successful
completion of the course or program. To avoid this, it may be best to consider the assessment method while creating an outcome.

**Examples of measureable Learning Outcomes:**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>&quot;Students will distinguish form and content in 2D and 3D works of art.&quot;</td>
</tr>
<tr>
<td>Computer</td>
<td>&quot;Students will evaluate the strengths and weaknesses of open and closed source software development models.&quot;</td>
</tr>
<tr>
<td>Communications</td>
<td>&quot;Students will apply principles of logical argument and persuasion in their oral presentations.&quot;</td>
</tr>
<tr>
<td>English</td>
<td>&quot;Students will integrate information from different types of secondary sources to support a thesis on a research paper.&quot;</td>
</tr>
<tr>
<td>Graphic Design</td>
<td>&quot;Students will identify formal principles associated with color theory.&quot;</td>
</tr>
<tr>
<td>Library Studies</td>
<td>&quot;Students will critically evaluate websites for possible use in an academic research paper.&quot;</td>
</tr>
<tr>
<td>Math</td>
<td>&quot;Students will solve selected differential equations using graphical, numerical and analytical methods.&quot;</td>
</tr>
</tbody>
</table>

**How many Outcomes are enough?**

The average number of outcomes per course in most colleges and universities is between three and six. The same is often true for Program Learning Outcomes. As said above, the outcomes of a course or program are the broad and overarching concepts covered by that course or program – not a listing of the specific topics covered. If a course or program has a large number of outcomes, look to see if any are interrelated and establish a single outcome that speaks to the larger relationship, rather than the smaller components individually. The goal is to establish what is the fundamental core of the course or program, not the various topics will be learned.

**Selecting an Assessment Method**

**What is an assessment “instrument”?**

The instrument is what is given to the students specifically geared to measure whether students have achieved a particular outcome or set of outcomes. Think of this as the method of assessing student achievement of the outcome. Special care must be taken to ensure that the instrument directly assesses how well the students meet the outcomes; indirect assessment, such as asking students if they thought they had achieved the outcome is more of an opinion survey than an assessment of their learning.

Be aware of all the dimensions of the Learning Outcome, as an outcome could have more than one dimension that are the key aspects of that outcome. An outcome pertaining to ‘effective writing’ will have the dimensions of mechanics, style, and thesis development, and all those dimensions should be measured by the assessment instrument for that outcome.

Some consideration should be given to how well students are expected to learn, to the level of mastery of the material, when establishing the assessment instruments and the
goals/targets for the Learning Outcomes. For this, a department-developed rubric for the assessment instrument would be useful, and can be added as supporting material on the Program Review.

Keep in mind that an assessment instrument is not the same as a grading rubric. A grading rubric is the guidelines for evaluating the work done by the students, specifying the criteria for the levels of mastery. However, criterion on that rubric can be used to assess a Learning Outcome, thus the same grading rubric could be used to measure more than one outcome. See Appendix B for an example of this. The key point here is that grades are not an assessment of the Learning Outcome, as more than the outcome is being measured when assigning a grade.

What can be used as an assessment instrument?
This depends on the outcome.

Student Learning Outcomes in a course would be measured using the assignments of a course and / or a set of individual questions on an exam. If a portion of an assignment or an exam speaks directly to an SLO, that portion can become the assessment instrument for the SLO in question. In this way, the assessment of the SLOs is embedded naturally in the course. To assist with using exam question for measuring an SLO, there are Item Analysis sheets readily available next to the Scantron machines in the Faculty Mailroom (Gillmore Center 114).

Ideally, all sections of a course would use the same assessment instrument, but departments have the freedom to adjust to the individual nature of the department with the understanding that not using the same measurement instrument can affect the overall reliability and validity of the data gathered across sections. However, if different assessment instruments are used, this can be a useful starting point for discussions on rates of student achievement of the SLO(s).

For Program Learning Outcomes, there are three possible methods for measuring the outcomes:

- **SLO-to-PLO assessment**
  This involves mapping the SLOs of the core courses of a program to the PLOs and using the assessment results of those SLOs as part of a meta-analysis for the PLOs.

- **Capstone Course or Project assessment**
  This method is most common for degree or certificate programs in which the students work up a sequence of courses to a final course or project that must be done just prior to graduation. As all the previous course work was in preparation for the capstone course/project, measurement of that course’s SLOs or the criteria for the grading rubric for the project that point to the PLOs is fairly direct.

- **Licensing or Standardized Industry Exams**
  A number of Career and Technical Education (CTE) programs lead to some type
of licensing exam, if detailed information about the passage of the exam by students is available from the licensing board, the program may want to consider using that information for measuring the PLO(s). Likewise, there are a number of non-CTE programs that have related industries that have developed a standardized exam. If details about student performance on that exam are available to the program, it may be useful for assessing the PLO(s).

For a more detailed, step-by-step description of assessing PLOs using the above methods, see Appendix C.

How many assessment instruments/methods does a course need to have?
When choosing an assessment method, consider both the ease of the application and the meaningfulness of the results.

An Learning Outcome that calls for improvement of the students’ abilities will necessitate more than one application of the assessment instrument – once at the beginning of the course or program and then again at the end.

It is perfectly acceptable to measure multiple outcomes with one assessment instrument. Consider the following SLOs:

| SLO1: "Students will be able to describe major ecological principles." |
| SLO2: "Students will be able to critically analyze solutions environmental problems." |

A single writing assignment that requires that students analyze an environmental problem and apply the major ecological principles to that problem could then be scored on three dimensions: how well the student achieved the first SLO, how well the student achieved the second SLO, and how well the essay was written overall. While such a rubric as a whole may provide a grade for the assignment, the achievement of each SLO must be recorded independently of that grade.

Why can’t we use grades?
Although counting letter grades would be easier, it provides neither consistent nor meaningful information about student achievement of a specific outcome, particularly across a number of sections and courses.

Assignment, exam, or course grades are an aggregate assessment of the student's work, and other factors – such as timeliness, extra credit, grade curves, homework completion, and class participation – may be part of the calculation, not just the achievement of the particular Learning Outcome. Thus, it is important to remember that the grade for the assignment is not a true assessment of an outcome.

Setting Targets
Once the assessment instrument has been created, set goals, or targets, that should be met by the course or program under that assessment. This will entail specifying a
percentage of students achieving an established minimum mastery of the outcome. It is up to the departments to set the initial goals, but they should be realistic given the nature of the course.

This allows a program to measure not just its expectation of the students’ mastery, but also to allow for the measure of progress over time. The point of measuring Learning Outcomes is to improve student learning, and setting a target facilitates a discussion of the results in a way that leads to that improvement.

Goals are set by the department and can be changed over time. They are included in the assessment documentation rather than on the official course or program outline of record so that they can be changed as the department adjusts its expectations of improved student learning. If the assessed course or program is meeting the departmentally set target, perhaps the goal should be raised. The purpose of measuring learning outcomes is to use the outcomes assessment to drive improvements to student learning, to measure whether or not changes to the course or program has helped students achieve greater academic success.

The Assessment Process
Appendices D and E provide flow charts of the Assessment process for the SLOs and PLOs, respectively. There are also examples of completed Assessment Evaluation forms that can be used as references for when reporting the results of assessments of each type of outcome.

How often should SLOs be assessed?
Outcomes Assessment must be ongoing and done on a regular basis for each course and program – for true reliability of the data, assessment must become an academic habit. Regular assessment gives departments longitudinal data of student learning that will provide better evidence of sustained quality or improvement.

Some departments will choose to engage in annual assessments of Learning Outcomes, while others will assess more or less often, depending on the frequency of the courses being offered. However, consistency is the key to promoting the spirit of continuous improvement.

The best practice is to assess outcomes, analyze the data, discuss the results, implement changes in practice, and then reassess, to see if those changes had an impact, on a regular basis. Outcomes assessment evaluation is just the documentation of that process. The worst practice is to assess only once per program review cycle. This signals that assessment is only being used as a means of compliance with standards, not to actually improve student learning.

At a minimum, each Learning Outcome must be assessed once per Program Review cycle. If assessment is done on a regular basis, there will not be a need to scramble to get the course assessments done before a Program Review is due. Use the mapping documentation to plan both the SLO and the PLO assessments to spread out the
assessment cycle across the full Program Review cycle. The pacing of the Learning Outcomes Assessment should be set so that faculty do not feel overwhelmed by the process.

Who is in charge of assessment?
Each department is responsible for the assessment Learning Outcomes within that department. While the chair of the department is traditionally responsible for ensuring that outcome assessments are being done, other faculty within the department may assume that task.

Likewise, departments with more than one professor regularly teaching a course might consider having a course coördinator who will take on the responsibility of overseeing the implementation of the assessment instrument(s) and the gathering of data. Not only will this build in the consistency that is needed for assessment, it will also ease the overall burden in that no one person in the department will feel the burden of assuring that all the outcomes are being assessed.

Assessment Evaluation Forms
To make full use of the process, the Assessment Evaluation Summary form should be filled out as completely as possible. In the future, it is hoped that the data submitted for Learning Outcomes will auto-fill into the corresponding portions of the Program Review, so being as detailed as possible is a good habit to develop now.

The major components of the form should feed into the next component – the logic of the Conclusions should be based on the details provided in the Results, in the same way that the Needs should be clearly based on both the Results and the Conclusions. There is no need to feel to be overly concise – details provided early in the process lead to greater discussions on how to continually improve student learning over the long-term.

It might be useful to departments to analyze the data on the basis of contributing variables. If departments wish to collect more extensive data than achievement of learning outcomes, such as an examination of the role of gender or ethnicity in achievement, that will help the department prepare for the 2014 Accreditation Standards on gathering disaggregated data. However, if such data is collected, departments should take care to maintain the level of student privacy that is dictated by Federal Educational Rights and Privacy Act.

Perhaps of interest to departments might be to separate the results based on when different sections are offered to analyze the effect of days or times offered, standard or late-start semesters, or other aspects of interest in student achievement. Students are more likely to sign up for a course if they have a higher expectation of success, and this will assist departments in maximizing their enrollments.

In Appendices D and E have examples of Assessment Summary forms, both actual forms filled out by departments and a "How To" guide for avoiding common mistakes.
Appendix A

Active Verbs to use
(not an exhaustive list)

“Students will be able to….”

Acquire
Adapt
Analyze
Apply
Appraise / Assess
Calculate
Categorize
Chart
Cite
Compare &/or Contrast
Compile
Compute
Conclude
Construct / Build / Configure / Assemble
Convert
Correct
Correlate
Create / Generate
Critically examine
Defend
Define / Interpret
Delineate
Describe
Detect
Determine
Develop / Design
Diagram / Sketch detailed model
Dissect
Distinguish / Differentiate
Draw
Evaluate

Explain
Express
Formulate
Graph
Hypothesize
Identify
Illustrate
Implement / Execute
Improve / Increase
Identify / Classify
Integrate
Label
List / Outline / State
Measure
Obtain and process data
Operate
Organize
Predict
Prepare
Produce / Reproduce
Quote / Recall
Rank
Rate
Recite
Recognize
Solve
Specify
Summarize / Synthesize
Support
Translate
Words Best to Avoid
(Not an exhaustive list)

Access
Appreciate
Become competent / knowledgeable / familiar
Carry on basic skills
Collaborate
Communicate
Complete
Conduct
Demonstrate a(n) understanding / knowledge of
Discuss
Display / Exhibit / Present / Show
Dress professionally
Enhance
Fine tune task details
Have greater skills
Have knowledge of / to
Investigate
Know
Learn
Maintain
Minimum of 3 images, charts, or graphs
Participate / Collaborate
Pass the course
Practice
Raise their consciousness
Recommend
Perform Tasks
Spend / Complete _____ hours
Supplement
Teach / Mentor / Critique
Understand
Use / Utilize / Employ
Work independently / with
Write / Draft / Compose
Appendix B

The following is an example of a rubric used for a non-objective final course assignment doubling as an assessment instrument for the three SLOs listed below.

<table>
<thead>
<tr>
<th>Name:</th>
<th>Logic:</th>
<th>Section: _______</th>
<th>On-time / Late</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grammar:</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sources:</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Citation:</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pages:</td>
<td>Full 5</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>On Point:</td>
<td>Yes</td>
<td>Wanders a little</td>
</tr>
<tr>
<td></td>
<td>As assigned:</td>
<td>Yes</td>
<td>Mostly</td>
</tr>
<tr>
<td>Grade:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Logic: Clarity of thought; flow of presentation is logical, clearly organized

Sources: Quality, and some quantity

Citation: did they do this? Well?

Pages: 1550 words = 5 full pages

On Point: Are they allowing themselves to be side-tracked?, Did they fully answer the prompt?

As assigned: Did they actually do what was assigned: 2 pages pro, 2 pages con, 1 page opinion

___

SLO 1: Students will critically analyze two sides of an argument on a particular topic, and defend a personal opinion based on the evidence provided.

Goal 1: Seventy percent (70%) of students will score “Good” or “Excellent” on the “As Assigned” line of the rubric.

SLO 2. Students will apply the principles of logic to develop an essay that demonstrates clarity of thought and organization.

Goal 2: Seventy percent (70%) of students will score “Good” or “Excellent” on both the “Logic” and “On Point” lines of the rubric.

SLO 3: Students will synthesize evidence in academic level sources and properly cite those sources using MLA standards.

Goal 3: Seventy percent (70%) of students will score “Good” or “Excellent” on both the “Sources” and “Citation” lines of the rubric.
Appendix C

How to Assess PLOs
There are several effective methods to assess PLOs. Three of the most popular ones are listed here. At the end is the final assessment steps, regardless of which method is used.

Method #1: Use mapping documentation
1. Map the course level SLOs to the PLOs for the degree or certificate.
2. Assess the course level SLOs – include as much information as is possible at this stage as it will make using the data from this level for the assessment of the PLOs much easier.
3. Gather the results of the course SLO assessments that map to a particular PLO.
   a. Examine the SLO assessments at the course level to look for patterns and threads.
      i. Are students at the course level developing the knowledge and skills they need?
      ii. Are students refining and improving the skills as they move through the course sequence leading to the degree or certificate?
      iii. Have the students in the program developed the skills they need to be proficient in their field by the time they finish the program?
      iv. Is scheduling of required courses having an effect on the students’ ability to achieve outcomes?
   b. Are students meeting the targets set by the faculty?
      i. If no, or not uniformly across courses:
         1. What immediate action can be taken to improve the outcomes?
            a. Different instructional strategies?
            b. Revise course or program curriculum?
            c. Faculty training in a specific area?
      ii. If yes:
         1. Are there any opportunities to further enhance that particular student skill?
         2. Should the target be set higher?
         3. Is the PLO appropriate – does it reflect the skills and mastery levels needed by students who complete the degree of certificate?

Method #2: Assess PLOs in capstone courses or projects
1. Identify the Capstone course(s) or project(s).
   a. Design and conduct the assessment.
   b. Examine the PLO assessment results and look for patterns and threads.
      i. Are students developing the knowledge and skills they need?
      ii. Have the students in the program developed the skills they need to be successful in the workforce or when they transfer?
   c. Are students meeting the targets set by the faculty?
      i. If no:
         1. What immediate action can be taken to improve the outcomes?
            a. Different instructional strategies?
b. Revise course or program curriculum?
   c. Faculty training in a specific area?

ii. If yes:
   1. Are there any opportunities to further enhance that particular student skill?
   2. Should the target be set higher?
   3. Is the PLO appropriate – does it reflect the skills and mastery levels needed by students who complete the degree of certificate?

Method #3: Assess PLOs using licensing or standardized industry exams

1. Identify the appropriate licensing or industry exam – must be able to draw out data particular to the program.
   a. Examine the results and look for patterns and threads.
      i. Are students developing the knowledge and/or skills they need to succeed on the exam?
      ii. Are there areas of the exam that students in which the students are underperforming, regardless of passage rate?
   b. Are students meeting the targets set by the faculty?
      i. If no:
         1. What immediate action can be taken to improve the outcomes?
            a. Different instructional strategies?
            b. Revise course or program curriculum?
            c. Faculty training in a specific area?
      ii. If yes:
         1. Are there any opportunities to further enhance that particular student skill?
         2. Should the target be set higher?
         3. Is the PLO appropriate – does it reflect the skills and mastery levels needed by students who complete the degree of certificate?

Then, for all three methods:

1. Examine the number of students completing the program, if possible:
   a. Are students in the program persisting through all the courses to completion or are there critical junctures where students are dropping out?
   b. Is there a correlation between the SLO assessment results and the critical junctures?
   c. Is there any correlation between the PLO assessment results and student persistence?
   d. Are there any changes/improvements at the course level that might lead to better PLO results?

2. Discuss the analysis with other faculty, both inside and outside the department.
3. Document and distribute this discussion.
4. Complete the PLO form and send it to John Spencer.
Appendix D: Student Learning Outcomes

Course Outcome Assessment Cycle:

- **(Re) Write SLO**
  - Plan Assessment
  - Assess All Sections
  - Collect & Analyze Data
  - Discuss and Evaluate Results
  - Write Up Evaluation
  - Effect on Student Learning?
  - Change the SLO
  - Course Improvements
  - No changes
  - No changes
  - Course Improvements
  - Change the SLO
The Five-Step Program for Happy SLOs

1. Download the fillable SLO form from the OAC website.

2. Using the SLOs in the current, active version of your course (the ones that are currently on your syllabus), carry out your assessment and fill out the form.

3. Please note that the form asks for a reference to a documented meeting in which you discussed your SLO assessment findings with your colleagues.
   a. If you have notes from your meeting, and they’re already on the P drive, you can just paste in the link or indicate in which folder on the P drive they are.
   b. If you have notes from your meeting, and they are not on the P drive, no worries. See #4b below for instructions.
   c. If you have no notes and/or you have not had a meeting, have one! We will accept any documentation of said meeting, so long as you did not record your notes on a cocktail napkin or a banana peel (well, at this point we probably would accept the cocktail napkin).
      • Your assessment meetings need not be big, formal gatherings. They can occur over coffee, in the hallway, anywhere where you already carry out the sorts of conversations you’re used to having with your colleagues about teaching and learning. Just make the notes as detailed as possible.

4. When you are done with your assessments and have gathered your documentation, please do the following:
   a. SEND THE WHOLE THING TO JOHN SPENCER at john.spencer@missioncollege.edu.
   b. If you have not yet uploaded your meeting notes to the P drive, no worries. Send your notes to John along with your assessments – he’ll take care of the uploading.
   c. Please remember to ‘cc’ your department and division chair so they are aware you’ve finished your assessments.
   d. It’s that easy! No more hunting around in the P drive! No more Astronomy assessments inadvertently winding up in the Anthropology folder!

5. Once you’ve sent your forms and documentation to John, sit back and reflect how to use the data to improve learning to future semesters.
Examples of completed SLO Evaluation Forms:
Mission College Student Learning Outcomes

Assessment Summary

Program / Department: **Fire Prot. Tech.**  
Course: **Emergency Medical Technician - Theory, FPT065**  
Course Coordinator: **David Rose**  
Semester of Assessment: **Spring 2015**  
Previous Assessment: **None Previous [Year]**

Number of sections: **3**
Participants: **David Rose, James Wyatt, David Huseman**

<table>
<thead>
<tr>
<th>Student Learning Outcome</th>
<th>Target</th>
<th>SLO Assessment Instrument</th>
<th>Results of the Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student will able to describe the care for a patient which will either improve, stabilize, or prevent deterioration of the condition.</td>
<td>In quizzes, midterm and final examinations, 70% of students will correctly identify 80% of the signs and symptoms.</td>
<td>Pre-selected multiple choice questions from quizzes and examinations.</td>
<td>Of the 72 students who completed the assignment(s), 68 (94%) successfully answered questions regarding the care for a patient which will either improve, stabilize, or prevent deterioration of the condition. Was the target met? ☑ Yes ☐ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conclusions Drawn</th>
<th>Needs</th>
<th>Evidence of Dialogue</th>
</tr>
</thead>
</table>
| As 97% of the class completed the assignment(s) (two students did not take the final examination), this is an indication that students are comprehending the material in both the lecture and reading assignments. | None at this time. | ☑ E-mail Discussion with ☑ Faculty ☐ Administration ☐ Staff ☐ Other  
[List anyone not listed above under Participants.]  
☑ Departmental Meetings 8/28/15  
Minutes posted: [Name(s) of file on P drive]  
☐ Division Meetings [Dates]  
Minutes posted: [Name(s) of file on P drive]  
☐ Campus Committee(s) [Specify the committee(s) and Date(s)]] |

<table>
<thead>
<tr>
<th>Moving Forward</th>
<th>Next Assessment</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue to monitor the industry for trends in vocational educational subject specific needs, as well as the most current best practices. In addition, be prepared for the forthcoming new edition of the textbook, which is based upon the National Standard Curriculum for EMT-B.</td>
<td>Fall 2016 *</td>
<td>None at this time. *</td>
</tr>
</tbody>
</table>
Mission College Student Learning Outcomes
Assessment Summary

Program / Department: **Chemistry**
Course Coordinator: **James Schwegge**
Course: **General Chemistry I – Chem1A**
Semester of Assessment: **Spring 2015**
Number of sections: **3**
Previous Assessment: **Spring 2014**
Participants: Salaam Al Baker, James Schwegge, Anh Tran

<table>
<thead>
<tr>
<th>Student Learning Outcome</th>
<th>1. Outcome: Demonstrate the ability to write correctly balanced chemical equations and apply equations in order to solve a variety of chemical applications including stoichiometry, solutions, gases, and thermochemistry.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>70% of assessed students will correctly answer questions focusing on stoichiometry as applied in thermochemistry and solution chemistry.</td>
</tr>
<tr>
<td>SLO Assessment Instrument</td>
<td>The SLO was assessed during the final exam with two multiple-choice questions (thermochemistry and solution chemistry). Although the SLO data was evaluated (correct or incorrect) using two multiple choice questions, these were chemistry problem-solving questions.</td>
</tr>
<tr>
<td>Results of the Assessment</td>
<td>The target (70% correct) was met. However, the results for each question assessing the single SLO were very different. 60 of 69 (87%) students answered thermochemistry correctly, and 5 of the 9 who answered incorrectly did not pass the course. 49 of 69 (71%) answered solution chemistry correctly, and 8 of 20 who answered incorrectly did not pass the course. 10 of 69 students did not pass the course; of those, 5 answered both assessment questions incorrectly. Was the target met? [ ] Yes [ ] No</td>
</tr>
<tr>
<td>Conclusions Drawn</td>
<td>There is room for improvement in the area of solution stoichiometry. This content is covered are multiple lab experiments and work sessions, but perhaps they are scheduled too closely together or too early before the final exam (when the SLO was assessed).</td>
</tr>
<tr>
<td>Needs</td>
<td>n/a</td>
</tr>
<tr>
<td>Evidence of Dialogue</td>
<td>Check all that apply [ ] E-mail Discussion with [ ] Faculty [ ] Administration [ ] Staff [ ] Other [List anyone not listed above under Participants.] [ ] Departmental Meetings</td>
</tr>
<tr>
<td>Minutes posted: 20150828DeptMeetingAgenda-Notes.pdf</td>
<td></td>
</tr>
<tr>
<td>Divison Meetings [Dates]</td>
<td></td>
</tr>
<tr>
<td>Minutes posted: [Name(s) of file on P drive]</td>
<td></td>
</tr>
<tr>
<td>Campus Committee(s) [Specify the committee(s) and Date(s)]</td>
<td></td>
</tr>
</tbody>
</table>

| Moving Forward |
| Reconsider the timing of SLO data collection and include assessment in lab reports or exams (not just limited to the final exam). Independently of this SLO assessment, the textbook has been changed. The next SLO cycle will use the same assessment to determine if the newer textbook helps resolve the disparity noted. |

| Next Assessment |
| * |

| Changes |
| * |
### Mission College Student Learning Outcomes
### Assessment Summary

**Program / Department:** Humanities  
**Course:** HUMAN 7: International Films  
**Course Coordinator:** Kathryn L. Wood  
**Number of sections:** 1  
**Semester of Assessment:** Fall 2014  
**Previous Assessment:** Spring 2014  
**Participants:** Helayna Thickpenney

<table>
<thead>
<tr>
<th>Student Learning Outcome</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students must be able to, in writing, analyze how well the films provide a medium of expression for the international / global issues particularly related to the experiences of individuals within the global community.</td>
<td></td>
</tr>
</tbody>
</table>

| Target | 60% of the students will be able to successfully complete this outcome. |

<table>
<thead>
<tr>
<th>SLO Assessment Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of the components of the term paper was that the students were to in depth explore the ability of a film, chosen individually, to accurately portray the reality of what had been dramatized on screen. This required the students to research the political/social reality to compare/contrast that context to the situation presented in the film.</td>
<td></td>
</tr>
<tr>
<td>Of the 30 students who completed the assignment, 25 (83%) successfully discussed the relationship between the political/social reality of an international/global/societal issue and the dramatic version presented the films chosen by the students.</td>
<td></td>
</tr>
<tr>
<td>Was the target met? ☒ Yes ☐ No</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Results of the Assessment</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>As only 75% of the class completed the assignment, this might be an indication that students are not able to complete the assignment, and thus not able to demonstrate an achievement of the outcome, due to an inability to access films not shown during class time.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Needs</th>
<th>Evidence of Dialogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>While there doesn't seem to be any structural needs, nor direct financial needs, there is an institutional need in that the college library's collection of international films may need to be expanded so that students have access outside of the course in order to complete the assignment, especially as the plan is to add more opportunities for students to explore films outside of the class hours.</td>
<td></td>
</tr>
<tr>
<td>☒ E-mail Discussion with ☐ Faculty ☐ Administration ☐ Staff ☐ Other [List anyone not listed above under Participants.]</td>
<td></td>
</tr>
<tr>
<td>☒ Departmental Meetings Hallway discussion with the chair of Humanities Minutes posted: [Name(s) of file on P drive]</td>
<td></td>
</tr>
<tr>
<td>☐ Division Meetings [Dates] Minutes posted: [Name(s) of file on P drive]</td>
<td></td>
</tr>
<tr>
<td>Moving Forward</td>
<td>The instructor will work with the college library to explore that institution’s movie licensing.</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Next Assessment</td>
<td>Fall 2015 *</td>
</tr>
<tr>
<td>Changes</td>
<td>The SLO needs a little work to make it more measurable and more in line with the core components of the course. *</td>
</tr>
</tbody>
</table>
# How To: Avoid Common Mistakes on the SLO Assessment Summary Form

**Mission College Student Learning Outcomes**

**Assessment Summary**

- **Program / Department:** Applied Artistry
- **Course:** AA4: Basket Weaving – Section 58269
- **Semester of Assessment:** Fall, 2014
- **Number of sections:** 1
- **Participants:** 23

<table>
<thead>
<tr>
<th>Student Learning Outcome</th>
<th>Target</th>
<th>SLO Assessment Instrument</th>
<th>Results of Assessment</th>
<th>Conclusions Drawn</th>
<th>Needs</th>
<th>Evidence of Dialogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students will use colored raffia to create a 5-inch flat basket</td>
<td>Students will earn a 70% average on their projects.</td>
<td>Students over the course of the semester created baskets using a variety of materials. 17 students met this criterion; 3 students withdrew from the class, and 3 students failed the class.</td>
<td>17 students successfully completed the course by earning a passing grade on all their projects. Was the target met? ☑ Yes ☐ No</td>
<td>[State what was the result of the discussion regarding the assessment data. Specifically, what was learned from the data? Be as detailed as possible, developing supportable conclusions from the above information.]</td>
<td>Results indicate that students need more practice with the materials.</td>
<td>[Check all that apply] ☑ E-mail Discussion with Faculty ☐ Administration ☐ Staff ☐ Other [List anyone not listed above under Participants.] ☑ Departmental Meetings [Dates] Minutes posted: [Name(s) of file on P drive] ☑ Division Meetings [Dates] Minutes posted: [Name(s) of file on P drive] ☑ Campus Committee(s) [Specify the committee(s) and Date(s)]</td>
</tr>
</tbody>
</table>

**Moving Forward**

- **Next Assessment:** Fall 2018
- **Changes:** The department will be changing the SLOs to combine #1 and #2, thus adding one on the students’ ability to use computer graphics programs to design baskets projects.

*If changes are made to the course or the SLO and/or its Assessment Instrument, reassessment should take place as soon as possible.*

- Specify where to find the meeting minutes that documents, in detail, the discussion.

- The Needs should be based on the evidence presented in the previous section of the form. If there’s no discussion of the results, how can it really show a need?

- The section number is not necessary, especially for courses with multiple sections.

- Do **not** use grades to assess an outcome.

- The point of the process is to improve the student learning through discussion of the results. These portions should be filled out with as much detail as possible.
Appendix E: Program Learning Outcomes

Program Outcome Assessment Cycle:

(Re) Write PLO

Plan Assessment

Assess the Program*

Collect & Analyze Data

Discuss and Evaluate Results

Write Up Evaluation

Effect on Student Learning?

Change the PLO

No changes

Curriculum Improvements

*(See Appendix C details on various methods for assessing a program.*)
List the faculty, as this may change from year to year.

Mission College Program Level Outcomes
Assessment Summary

Program/Department: Applied Artistry
Semester of Assessment: Fall 201
PLO Evaluator: Cynthia Schmee
Previous Assessment: [Semester]
Participants: The whole department

<table>
<thead>
<tr>
<th>Program Level Outcome</th>
<th>Identify, describe and practice techniques for Applied Artistry.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>80%</td>
</tr>
<tr>
<td>PLO Assessment Instrument</td>
<td>SLOs that were mapped to the PLO.</td>
</tr>
<tr>
<td>Results of the Assessment</td>
<td>The target was met across all the SLOs.</td>
</tr>
<tr>
<td>Conclusions Drawn</td>
<td>The department is pleased with the results.</td>
</tr>
<tr>
<td>Needs</td>
<td>More studio space for students in the Large Projects course is needed.</td>
</tr>
<tr>
<td>Evidence of Dialogue</td>
<td>Check all that apply</td>
</tr>
<tr>
<td></td>
<td>□ E-mail Discussion with □ Faculty □ Administration □ Staff □ Other</td>
</tr>
<tr>
<td></td>
<td>[List anyone not listed above under Participants.]</td>
</tr>
<tr>
<td></td>
<td>□ Departmental Meetings [Dates]</td>
</tr>
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<td></td>
<td>Minutes posted: [Name(s) of file on P: drive]</td>
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<td></td>
<td>□ Division Meetings [Dates]</td>
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<td></td>
<td>Minutes posted: [Name(s) of file on P: drive]</td>
</tr>
<tr>
<td></td>
<td>□ Campus Committee(s) [Specify the committee(s) and Date(s)]</td>
</tr>
<tr>
<td>Moving Forward</td>
<td>The department will continue to offer the degree.</td>
</tr>
<tr>
<td>Next Assessment</td>
<td>Fall 2017 *</td>
</tr>
<tr>
<td>Changes</td>
<td>N/A*</td>
</tr>
</tbody>
</table>

Of what? Be sure to include as much detail as possible to make clear what is being measured.

Which SLOs in which courses? There needs to be great detail as to what data was used to assess the outcome.

This needs to be a discussion of the PLO results. Details are important.

Is this a program need or a need based on one course?

Is there nothing that needs improving or updating?

There needs to be documentation of a discussion of the results.
Appendix F: Program Learning Outcomes

Cheat Sheet for Evaluating SLOs, PLOs and SAOs

SLOs
- Does the SLO require higher level thinking skills?
- Does it synthesize course objectives?
- Is it measurable?
- Would students understand what it means?
- If it's part of a sequence of courses, does it build from the lower level SLOs?

PLOs
- Does the SLO require higher level thinking skills?
- Does it synthesize course SLOs or skills in the program?
- Is it measurable?
- Would students understand what it means?

SAOs
- Does it describe what the STUDENT can do after experiencing a service?
- Is it measurable?
- Would a student understand what it means?