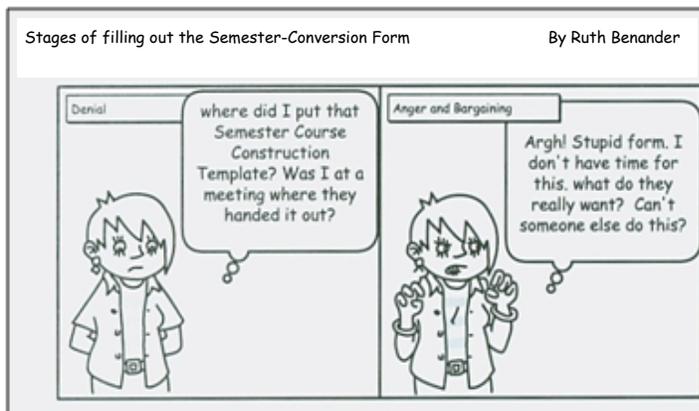


Course-Based Student Learning Outcomes Modules

Introduction



How will these modules help with filling out the Semester-Course Template?

As part of the semester conversion process, we need to fill out the Semester-Course Construction Template form. Most of it is pretty straight forward except for the section where it asks for **Student Learning Outcomes (SLOs)**. The CET&L is hosting lots of workshops that deal expressly with the challenges of creating good student learning outcomes. The CET&L and Ruth Benander created this set of modules so that you can work independently through the process.

What are Student Learning Outcomes (SLOs)?

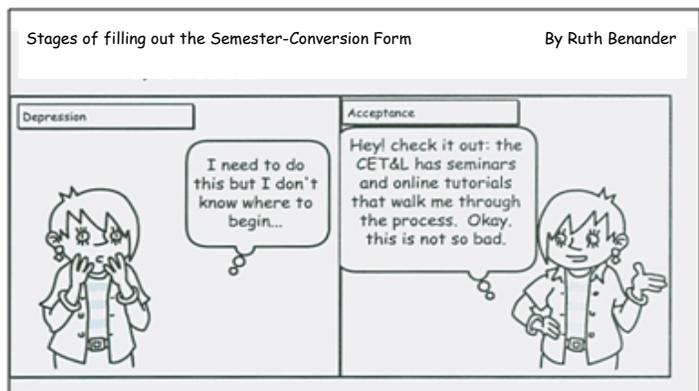
Sometimes called “goals” and/or objectives the phrase “student learning outcomes” in this context refers to knowledge, skills, abilities, or attitudes that students should have achieved by the end of the course or a formal educational experience, ones that are both observable and measurable. The emphasis of student learning outcomes is on what students can do with what they have learned, resulting in a product that can be evaluated.

How will these modules help me?

This set of modules will walk you through the process of thinking about and defining Student Learning Outcomes, creating activities aligned with those outcomes, and then assessing student work within those activities. At the end of this set of modules, you should have a rough draft of student learning outcomes that you can share with your colleagues and refine for the form. As a bonus, you will also have a rough draft of some innovations you can add to courses you may be teaching next year. Faculty who have been through this process report that they have discovered how to use class time more efficiently, their teaching has been re-invigorated, they actually look forward to class, and students seem to be learning better.

How long will it take to complete?

Each module is broken down into single steps. It should take about half an hour to do each one. Remember that you are not restricted to the little boxes on these pages! Print out extra copies of these forms so you can brainstorm freely. **If you are working with an existing course, you need to have a current version of the syllabus for that course handy.**



These modules are not an end point in this process; they are only the beginning. It is a starting point for the conversations you have with your colleagues about teaching and learning. These modules provide a base for your department to continue to develop as you all work together through the changes we face in the next few years.

Module 1

Establishing Expectations

The Context:

When students arrive at the first day of class, we expect them to already have certain foundation knowledge and be able to perform certain tasks without instruction. However, our students come from a wide variety of backgrounds and so may be prepared at different levels. Regardless of the final outcomes of the course, **it is important to know where students are starting out.**

If we test our expectations of their levels of preparation, then not only do we know the point from which they are starting, but we also communicate what we expect from their performance in the course. In order to more clearly envision what we expect students to be able to transfer to future courses, it is helpful to first establish the base from which they are starting.

For this exercise, we will divide expectations into the following categories: technology, content and skills.

The Task:

After viewing the examples on the next page, list your expectations for what students should already know in terms of:

1. **Technology** (such as software or web applications)
2. **Content** (such as basic concepts and background knowledge)
3. **Skills** (such as language proficiency, research skills or knowing how to use certain databases)

If the category headings listed here aren't applicable to your situation, feel free to adopt headings that suit your needs.

Module 1

Establishing Expectations

Examples

In English Composition, a professor might have the following expectations for a student entering this first year writing class: These are skills and knowledge that she does not intend to teach, but expects students to already know.

Technology	Content	Skills
Use Blackboard Use Email Use Library	Use grammatically accurate English Write coherent paragraphs Read and summarize popular informational articles Cite sources in MLA format	Send email with attachment Post on BB discussion board Download documents from BB Find articles on library database Find articles on Google

Entering a microbiology course, the professor might have the following expectations of knowledge and skills.

Technology	Content	Skills
Use Blackboard Use Email Use microscope	Cell theory Gene theory Evolution Homeostasis	Use course specific software Laboratory methods Laboratory safety Writing lab reports

Module 1

Establishing Expectations



Technology

Content

Skills

Module 2

Assessing Expectations

The Context:

Once you have a good idea of what you expect your students to be able to do with no instruction from you, it is a good idea to check out these expectations.

Checking to see if students are prepared for your class serves three purposes:

1. You find out if they really are prepared at the level of your expectation or not.
2. It helps the students know what you expect.
3. It serves as a review of past learning to help bring that previously learned information to the fore so that it is fresh and accessible.

If students do not meet your expectations, then you know what kind of remediation you need to offer. This kind of iterative learning is essential for the transfer of knowledge from one context to another.

The Task:

For this exercise, you will condense what you listed in Module 1 by briefly list your expectations for student preparedness for your course in the technology, content and skills boxes following the example page.

For each of these areas, think of what you might do to assess whether or not they know these things. For example,

- You could do a separate assessment for each category.
- You could create one assignment, like a pre-test based on a pre-requisite course's final exam, that incorporates them all.

You can give these assessments on the first day or at least some time in the first week of class. Categories may overlap, so you might want to create your own map showing how you assess your expectations.

An example follows on the next page. The instructor drew an extra arrow demonstrating how she felt the technology and skills were really the same issue for her.

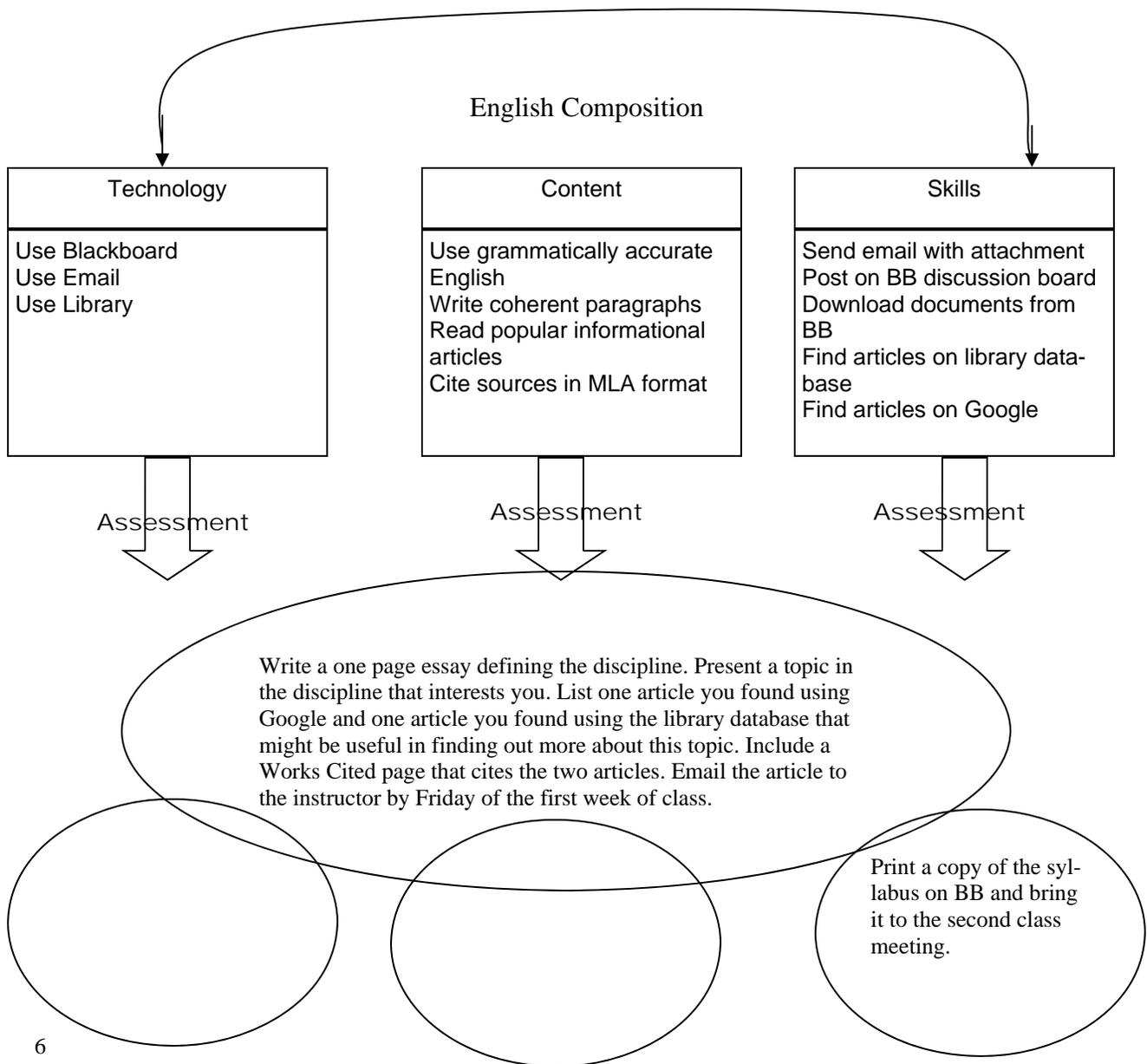
Module 2

Assessing Expectations: Example

Here is an example of two assignments that a professor in English Composition uses to assess the level of knowledge and skills of first year students in the first quarter of English Composition.

Example #1: A psychology professor who teaches Introduction to Psychology II gives an abbreviated version of the final exam from Introduction to Psychology I on the first day of Introduction to Psychology II. She reports that this helps students realize the topics they need to review in order to be successful in Introduction to Psychology II.

Example #2:



Module 2

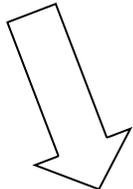
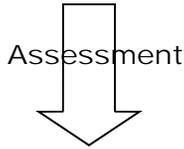
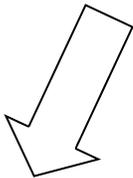
Assessing Expectations



Technology

Content

Skills



Module 3

Five Years from Now...

The Context:

In Modules 1 and 2, you established what you expect your students to already know and how you will find out if your expectations are accurate. **These expectations would be the learning outcomes of the courses that preceded yours.**

For the exercise on the next page, you need to set your expectations aside and **think about what students should be able to do when they leave your course or graduate from your program.**

In order to do this, you should:

- Consider what key skills or concepts you would like them to be able to remember five years from now.
- Consider what skills or concepts other professors who teach courses that follow yours expect your students to be able to do and know, without further instruction, when your students come into their classes.

If we think of ourselves as helping students to become professionals in their fields, then we can look for inspiration in thinking about what a professional in the discipline is expected to be able to do (e.g.. [APA](#), [ACTFL](#), [WPA](#), [Pharm Assoc](#)).

For a well-known humorous perspective on this problem, go to YouTube to see the comedy sketch about [“The five minute university.”](#)

The Task:

If you already have “course goals” listed for your course, put those aside for the moment and use this activity to think in a different direction.

List what you expect a student to know and do, on their own without further instruction, **after** they leave your course. If the categories below are not appropriate for your course, rename them to better fit your situation.

Module 3

Five Years from Now...



Technology

Content

Skills

Module 4

Goals, Objectives, and Outcomes! Oh, My...

The Context:

There is a lot of jargon in instructional design, and all the different terms can turn into a grey fog. Some institutions use “goals” as their term for the concrete and measurable results of learning. For the purposes of UC’s semester conversion, we are going with the term “**student learning outcomes**” for the guiding principles that underlie a course.

The stress is on what students can DO with what they have learned, resulting in some sort of product that can be evaluated.

Thus, if there are certain concepts that I want my students to be familiar with, then my learning outcome would be an application that would require knowledge of those concepts to complete.

In thinking about learning outcomes, we might turn to Barbara Tewksbury, professor of geosciences at Hamilton College and author of [Designing Effective and Innovative Courses](#). Tewksbury suggests, “Your course should enable your students, at the appropriate level, to *do* what you do in your discipline, not just expose them to what you know.” For further ideas, you could consult standards set by your professional association or accrediting agency.

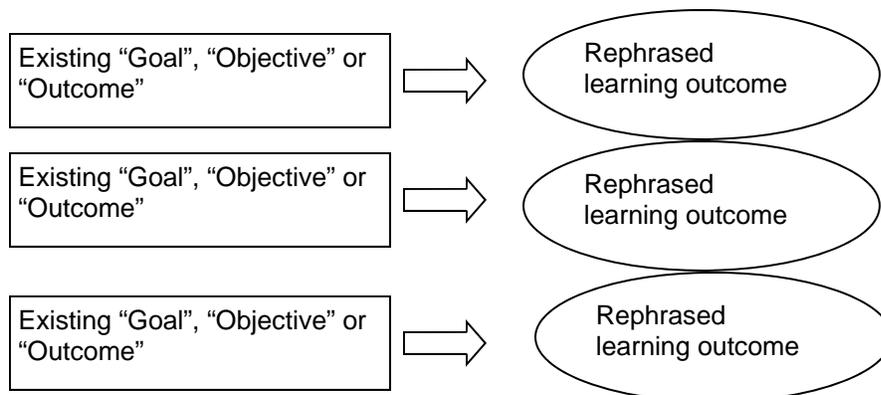
The Task:

For this exercise, you will restructure your class goals into outcomes. If your course already has something called “goals” or “objectives”, list them separately. Then, for each goal, rephrase it, if necessary, as an **activity or application** that results in a product that you can evaluate to find out if the student can apply the knowledge or do the activity.

Outcome Writing Tips:

- Phrase these outcomes to use higher order thinking skills such as “evaluating” or “analyzing”.
- Be sure you can measure or evaluate the outcome in some way.
- Make them concrete rather than abstract.
- Use active verbs, rather passive verbs, so you specify who is doing what. Passive verbs hide who the actor is, so when specifying actions, active verbs are clearer.

The following pages include examples of revised learning outcomes.



Useful sources: [Cabrillo College Learning Assessment Process](#)
[Cutting Edge Course Design Tutorial](#)

Module 4

Sample Outcomes

Example #1:

It might seem very simple to just take the Ohio Board of Regents TAG designations. The problem is that the TAGs are not course specific. As a result, they are either vague or inappropriately ambitious for a given course.

The example below demonstrates how to change a TAG into an outcome.

TAG: students will be able to *demonstrate an understanding of and/or be able to apply*

1. the historical and cultural context which produces British literature
2. techniques used to analyze a text
3. accurate critical reading, writing, and discussion of British authors and movements
4. coverage of a substantial portion of the later period of British literature from the onset of industrialism to the present.

Students will work with a representative literary text from this period and

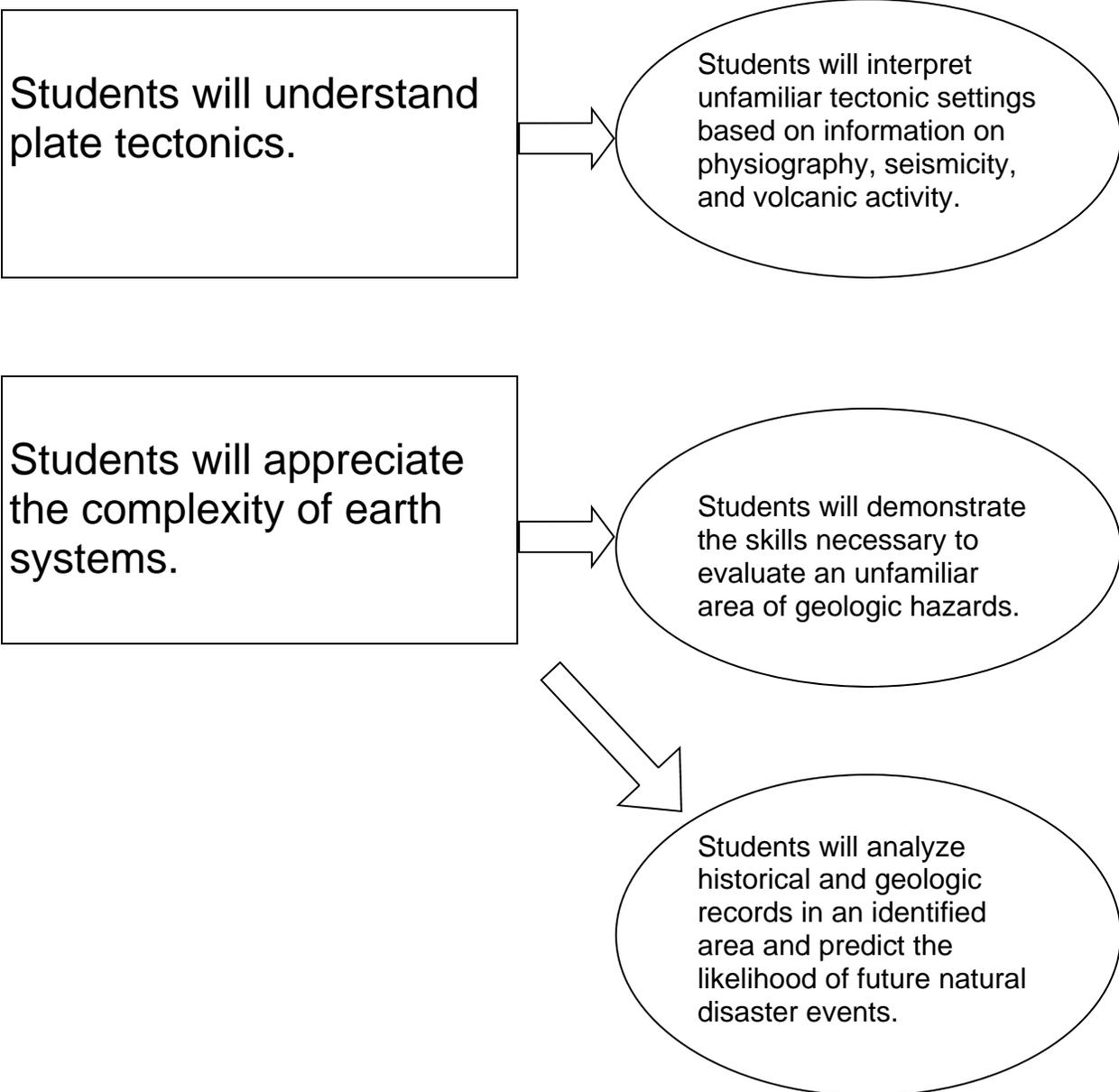
- *list and explain* at least two distinct historical and/or cultural developments that might be relevant to understanding the text.
- evaluate how specific aspects of the text are enhanced through our knowledge of those non-literary developments.

Module 4

Sample Outcomes

Example #2

This is a sample rephrasing into concrete, measurable student learning outcomes. Note that, sometimes, a very general “goal” will turn into several different concrete learning outcomes. The general samples are taken from Barbara Tewksbury’s [Designing Effective and Innovative Courses](#).

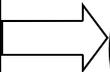


Module 4

Goals, Objectives, and Outcomes! Oh, My...

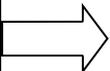


Existing "Goal", "Objective" or "Outcome"



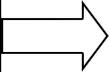
Rephrased learning outcome

Existing "Goal", "Objective" or "Outcome"



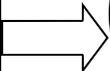
Rephrased learning outcome

Existing "Goal", "Objective" or "Outcome"



Rephrased learning outcome

Existing "Goal", "Objective" or "Outcome"



Rephrased learning outcome

Module 5

Establishing Student Learning Outcomes

The Context:

Take a look at your list from Module 3 and your rephrasing list from Module 4. It is possible that they look different or that they overlap in some areas and not in others. Sometimes this set of exercises results in a reorientation of a course as you rethink the learning priorities of the course.

The next three modules will help you think about what kinds of changes you can make now, and what kinds of changes can wait and be made over time.

The ***Semester-Course Construction Template*** asks you to identify your Student Learning Outcomes.

In order to specify the topics you need to cover, you first need to specify the specific learning outcomes that will require those topics.

Keep in mind that there is not a “right” or “wrong” number of Student Learning Outcomes. Write as many as you can reasonably cover given the time constraints of your course.

The Task:

Comparing the two lists you made in Modules 3 and 4, chose three to five specific student learning outcomes for the course you are responsible for.

Learning Outcome Writing Tips:

- Avoid phrases such as *I want to expose students to...* or *I want to show students that...*
- Don't fall into the trap of writing a student learning outcome that says *I want students to be able to be exposed to....!*
- Avoid verbs such as *understand, appreciate, reflect on, or value.*
- Use verbs that signal higher order thinking skills, such as *derive, predict, analyze, design, interpret, synthesize, formulate, plan, correlate, evaluate, create, critique and adapt.*

[Here is a concise list of verbs.](#) [Here is an in-depth resource for learning outcome verbs.](#)

Module 5

Establishing Student Learning Outcomes



Student Learning Outcome #1

Student Learning Outcome #2

Student Learning Outcome #3

Student Learning Outcome #4

Student Learning Outcome #5

Module 6

Assessing Student Learning Outcomes

The Context:

You will see that many documents refer to the fact that student learning outcomes need to be “concrete” and “measurable.” This just means, “Can you create an activity where students can demonstrate their achievement of the learning outcome?”

Traditionally, this activity has been the final exam. We take the students’ scores on the final exam as a measurement of their achievement in the course. Unfortunately, the student learning outcome, “Students will achieve a passing score on the final exam,” is not a very specific outcome as it does not specify what the student actually knows. As a result, **final exams are fine general assessments, but more specific assessments, or referring to specific topics on the final exam, are more descriptive of student learning.**

Assessments can be:

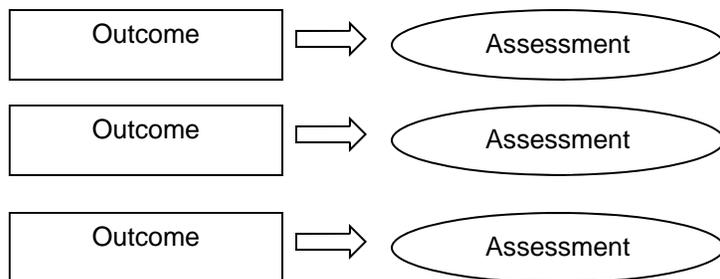
- Capstone papers
- Problem-based-learning project
- Exams
- Performances
- Any product that demonstrates a student can perform the learning outcome

If we think of ourselves as helping students to become professionals in their fields, then we can look for inspiration in thinking about what a professional in the discipline is expected to be able to do. (e.g.. [APA](#), [ACTFL](#), [WPA](#), [Pharm Assoc](#))

The Task:

List the learning outcomes you have identified in Module 5. For each learning outcome, indicate what kind of product you will use to measure the students’ final competency. Sometimes, one assessment, like a capstone paper, can be used to measure more than one student learning outcome. Please print extra forms if your list will not fit on the worksheet.

The following page includes sample assessments for student learning outcomes.



Module 6

Samples of Assessing Student Learning Outcomes¹

ANTHRO 13 Forensic Anthropology

Using the basic principles of forensic anthropology, **analyze** skeletonized human remains to determine sex, age at death, height and genetic ancestry.

Assessment: Final group project. Students are provided with an online case study concerning skeletonized human remains. Given the data in the case study, students must write a forensic report that profiles the individual to the extent that the data allows.

CEM 151 Construction Fundamentals: Principles and Practices

Construct a building applying the skills and knowledge obtained in this class.

Assessment: Capstone project. Each student will complete a series of smaller projects based on topics covered in the course that will culminate in the plans for a viable, complete building.

CIS 103 Technical Support and Trouble Shooting

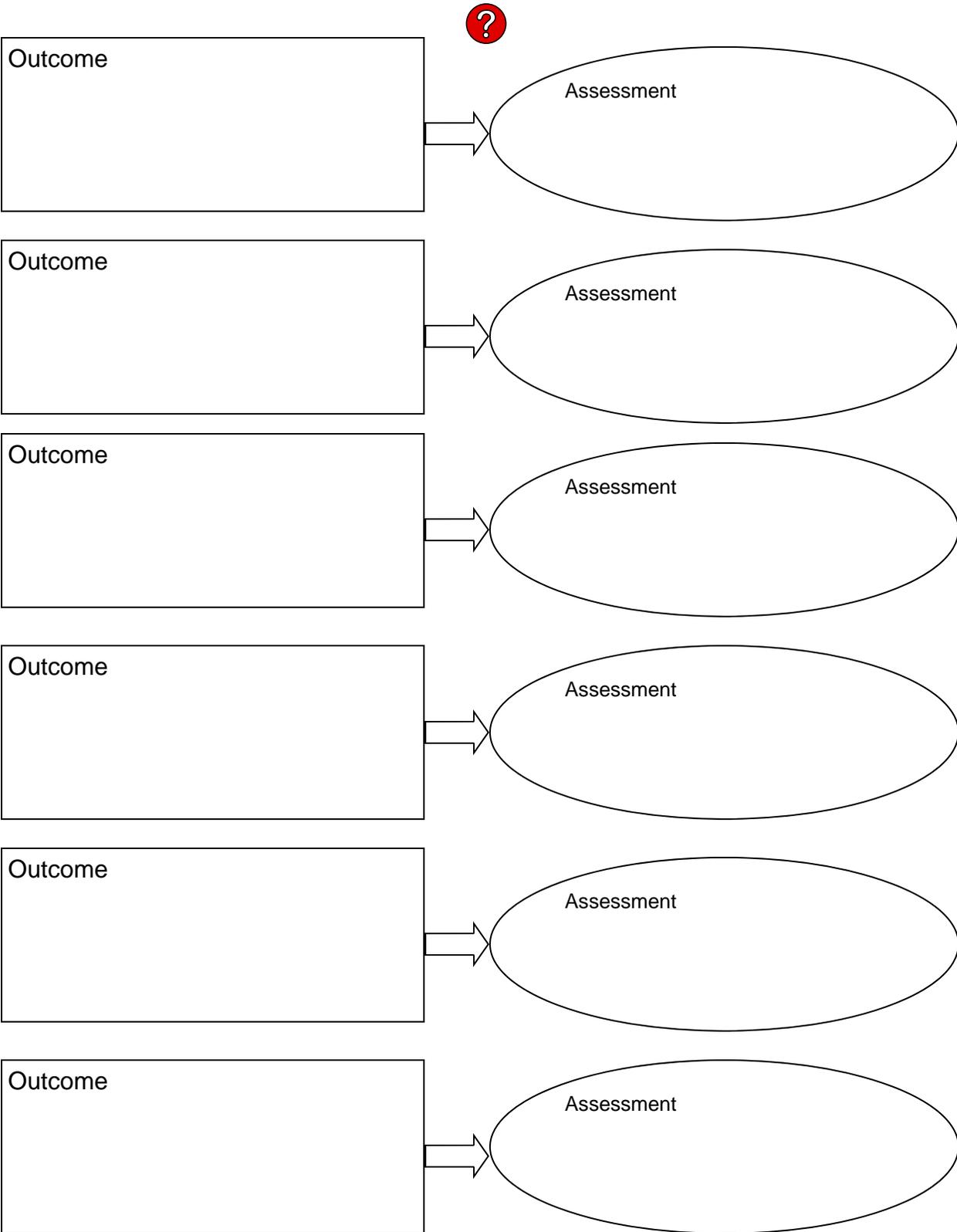
Solve novel hardware and software problems.

Assessment: In an interactive exam, students will be presented with a series of problems involving both hardware and software failures. The student must solve the problems in order to be able to complete and submit the exam.

1. Sample outcomes from Cabrillo College [Student Learning Outcomes Instructional Planning Process](#)

Module 6

Assessing Student Learning Outcomes



Module 7

Student Learning Outcomes and Activities

The Context:

Now that you have identified what students should be able to do on their own when they leave your course, as well as how you will know if they really have mastered those abilities, the next consideration is how to help them achieve that mastery.

You need to design activities that will help students learn to do the assessments you have designed.

Lectures and readings are the traditional activities that we offer students to help them learn course content which is then measured by papers and exams. We know that people learn better when they work to find the implications of what they are learning, apply the ideas, and practice the benefits of knowing the new information.

Creating assignments that work with these ideas may feed directly into the learning outcomes you have identified. We also know that being actively engaged in the course content promotes retention of information, so it is interesting to consider how to help students solve complex problems with real data .

Here are some sites that offer different types of strategies that you might consider.

[Designing Effective and Innovative Courses: Teaching Strategies](#)

[Active Learning Strategies](#)

[Twelve Active Learning Strategies](#)

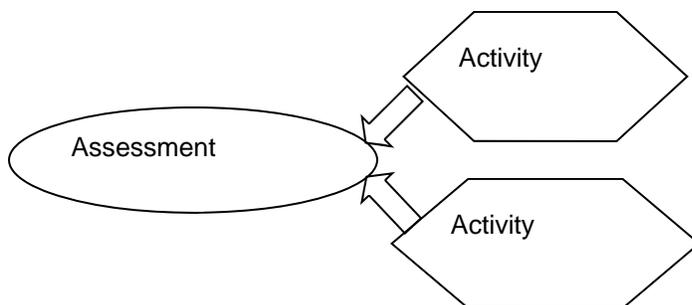
[Tips for Great Active Learning Strategies](#)

Well-crafted activities can help students cover and work with course content without a lecture. These kinds of activities will not take away from the amount of content you provide in your course. The assessment is folded into the activity so you can create a complete package.

The Task:

For each Assessment you listed in Module 6, list one activity or assignment that you could give that would prepare students to successfully demonstrate that they have achieved the learning outcome that generated this assessment. If you need more space, please print extra forms.

The following page includes examples of student learning outcome assessments with corresponding activities.



Module 7

Samples of Student Learning Outcomes and Activities

Assessment: Final group project. Students are provided with an online case study concerning skeletonized human remains. Given the data in the case study, students must write a forensic report that profiles the individual to the extent that the data allows.

Activity: Watch Youtube clip of CSI episode on establishing the age of death for skeletonized human remains followed by lab.

Activity: As a group, derive a system to figure out a person's height based on body part proportion. Using the members of your group as practice data, develop a method to derive the height of skeletonized human remains. A lab follows this activity.

Activity: Complete webquest activity covering establishing genetic ancestry of skeletonized human remains followed by lab.

Activity: As a group, derive method for establishing sex of skeletonized human remains from reading a selection of articles from the *Journal of Forensic and Legal Medicine* followed by lab.

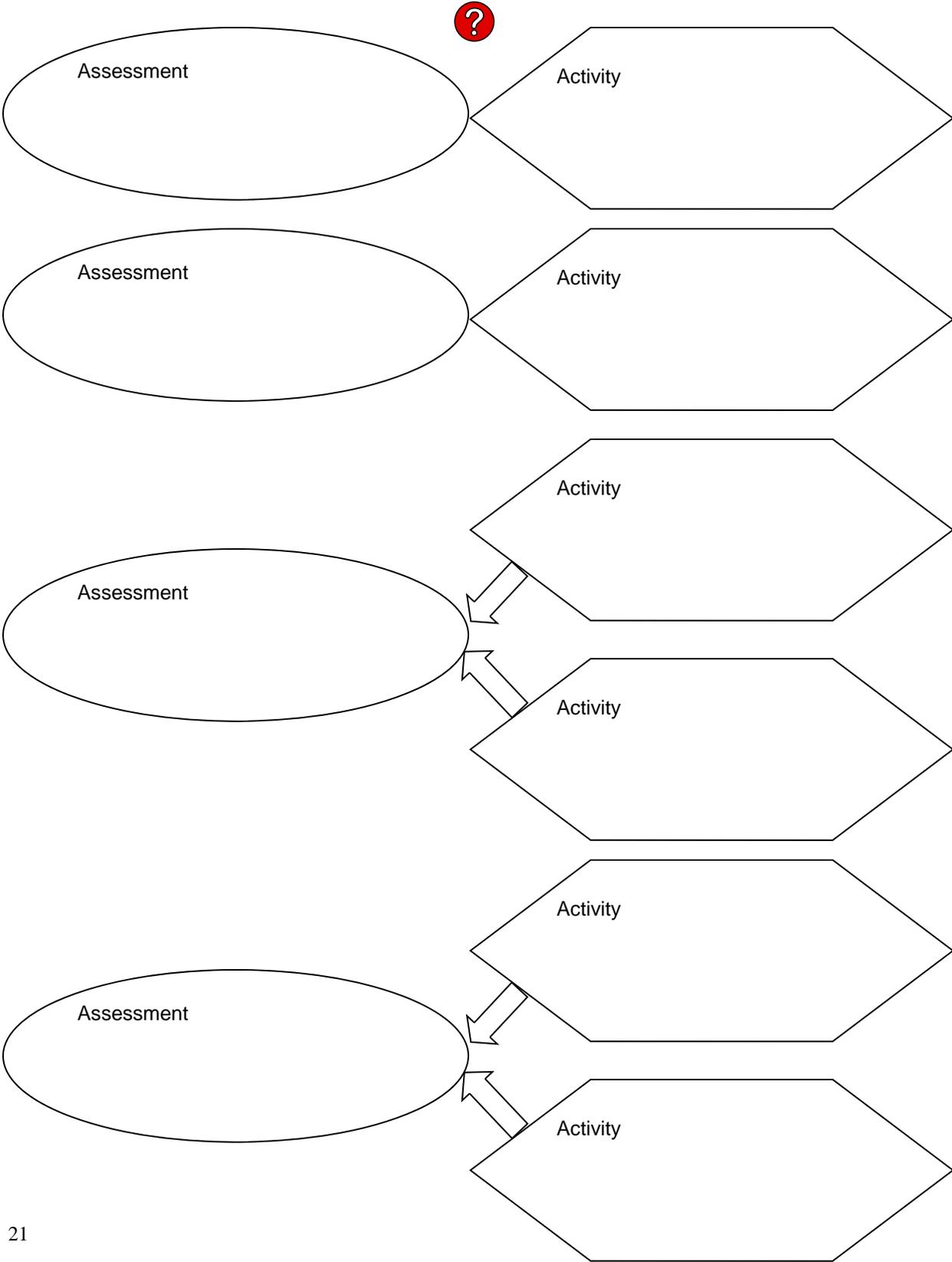
Assessment: In an interactive exam, students will be presented with a series of problems involving both hardware and software failures. The student must solve the problems in order to be able to complete and submit the exam.

Activity: Students arrive in class each day to discover a new hardware problem that prevents their class computer from working. The problem must be solved for class to continue.

Activity: Students analyze a series of online help desk queries and must analyze what kind of software problem the user is experiencing and provide appropriate trouble shooting advice to solve the problem.

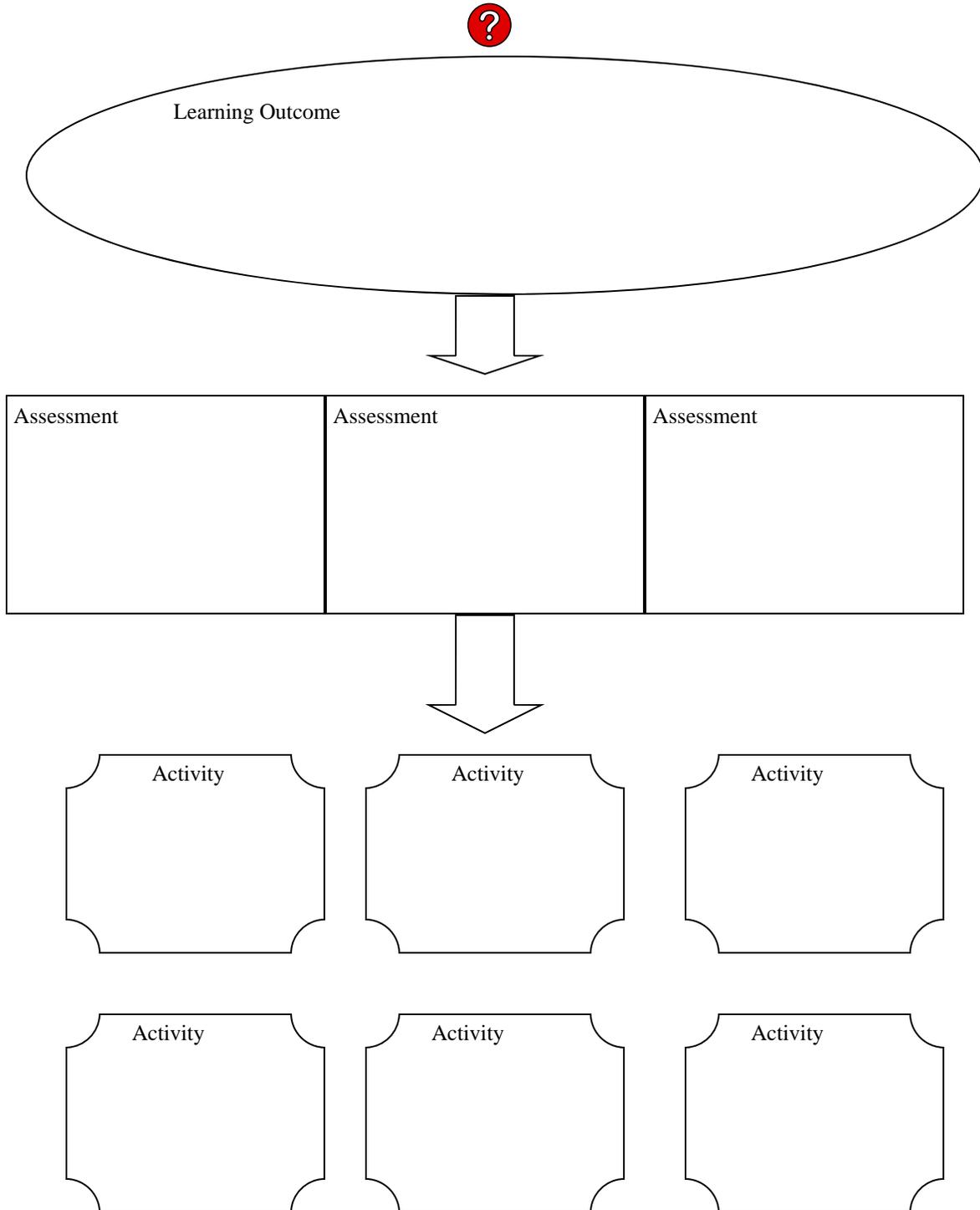
Module 7

Student Learning Outcomes and Activities



Summary

As an overview of what you have been working on, it is useful to put together learning outcomes, assessments, and learning activities you have developed in these modules. This one table will not be enough for all your learning outcomes, and the numbers of boxes are arbitrary, so you may need more. To be able to accommodate your work, it would be best to make this summary on a separate piece of paper. However, this table might be helpful to get started. If you decide to use the chart below, make enough copies to accommodate all your learning outcomes.



Completion Survey

Please click on the link below to access the completion survey. There are only a few questions, and your answers will help us improve these materials.

[SLO Modules Survey Link](#)