INTRODUCTION

Assessment

Academic program assessment is an ongoing process to measure the extent to which an academic program has achieved its objectives regarding the knowledge, skills, and abilities of program graduates and to identify changes that will help the program better achieve these objectives.

Assessment provides the answers to these questions: "*What do graduates know and what can they do?"* and "*What programmatic changes are necessary to improve the knowledge and skills of program graduates?"*

Academic program assessment is a structured and iterative process in which qualified faculty

- identify the specific knowledge and skills program graduates should possess;
- identify the elements of general education that complement and enhance the specific knowledge and skills graduates should possess;
- identify specific methods for measuring the knowledge and skills;
- interpret the results of those measures of student knowledge and skills;
- use those results to make curricular decisions intended to improve student learning; and
- repeat the process to monitor the effectiveness of curricular changes and to identify additional changes.

Academic program assessment should not be thought of as a periodic activity with a finite beginning and end. It is a continuous and ongoing process; each cycle provides information about the degree of success from the previous cycle and informs decisions and activities in the subsequent cycle.

The Purpose of Assessment

Continuous improvement of our programs is an important priority to prepare our graduates to perform in society, in the workplace, or in graduate school. Assessment planning and reporting allow faculty to identify the specific learning outcomes they desire for their graduates and to collect solid evidence of how well those outcomes have been achieved.

Assessment is required to maintain institutional accreditation as well as specialized program accreditation.

The Higher Learning Commission of the North Central Association of Colleges and Schools, ASU's regional accrediting body, places a particularly heavy emphasis on assessment. Assessment is at the core of Criteria Three and Four of HLC's *Criteria for Accreditation,* as well as being emphasized in the *Documenting Fundamental Understandings: Minimum Expectations within the Criteria for Accreditation.*

There are approximately 100 programs at ASU that have specialized accreditation. Nearly all the accreditation agencies require evidence on assessment of student learning.

All academic programs – majors and certificates, undergraduate and graduate – are expected to participate.

Certificates have come under closer scrutiny by accreditation agencies in recent years. This is in response to U.S. Department of Education expectations that institutions demonstrate evidence of student learning outcomes for programs that may be eligible for Title IV financial aid and are often marketed as preparation for certain areas of employment.

In the sections that follow, we will guide you through the preparation of an assessment plan for a single academic program, then illustrate the ways in which program faculty might use the data collected as a result of the assessment plan.

The assessment team does not keep a tally of the number of outcomes met – or not. Our office maintains logs of units that have current assessment documents on file and the quality of those documents. We provide

feedback to units on whether their assessment practices are likely to provide meaningful information about student learning that can be used to improve learning over time. This is so important that units who identify simplistic outcomes, weak measures, and unreasonably low performance criteria receive lower ratings than units who set reasonable expectations, acknowledge when outcomes have not been met, and identify realistic changes to address any issues they identify. As an institution, we are evaluated by accreditors not on the number of outcomes we meet, but on the evidence of active engagement in the assessment of student learning at our institution. "Closing the Loop" is the process whereby program faculty uses assessment information to drive decision-making aimed at improved student learning. This process is the sole purpose of program assessment, and the basis on which our assessment efforts are evaluated – internally and externally.

Remember: We are not "graded" on the number of outcomes we meet, but on our efforts to collect meaningful information about student learning and then use that information to improve student learning.

Assessment Planning

The assessment planning stage is the most complex and time-consuming stage of the assessment process, but good planning is a necessary foundation. Think of the assessment plan as the design and data collection plan for a small study that you will conduct over the course of an academic year. Your investment of time at the beginning to design a high-quality assessment plan will ensure that you collect meaningful data that will yield useful information about student learning.

Each step of the assessment planning stage provides the foundation for the next step, so please work through the steps in the order given in this handbook.

When to begin assessment planning

When a new program is proposed, you will be expected to develop learning outcomes and a full assessment plan. We understand that many aspects of the new program may not be in place yet, and that students may not reach measurement points until two or more years from the time of approval. It is important, however, for program faculty to know the intended program outcomes at the time a program is created. It is equally important for faculty to identify where in the new curriculum students will be exposed to program content, have opportunities to reinforce initial learning on that content, and ultimately demonstrate their knowledge of the content. You may find it helpful to develop a curriculum map at this point, to help pinpoint places throughout the curriculum where student learning can and should be assessed.

The assessment team will review your draft plan and either approve it or return it for revision. When the recommended revisions have been made, please submit the plan for final review. The assessment team will notify you when the plan has been approved.

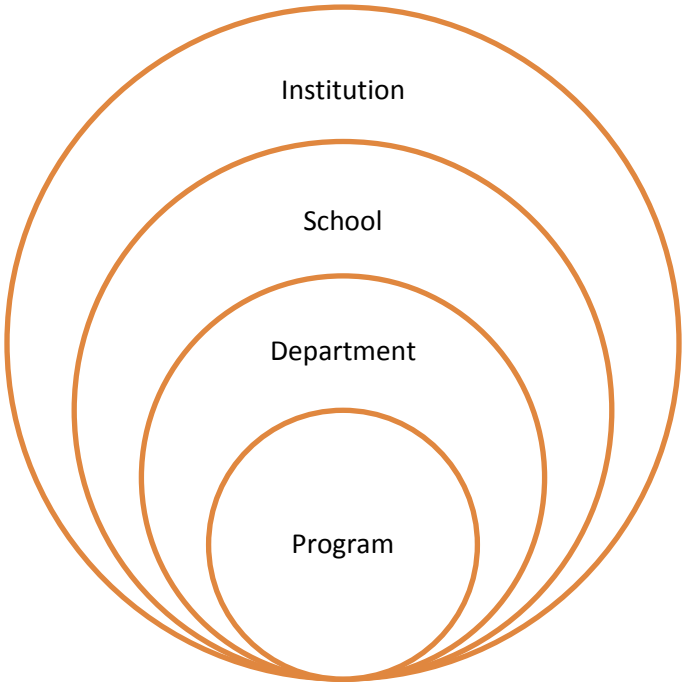
The assessment team is available to assist you with assessment planning and curriculum mapping. You will be asked to update your assessment plan each year when you submit your assessment report. Assessment reports are due September 30 of each year.

The graphic above shows the six steps to follow when creating an assessment plan. It is important to follow the steps in the correct order.

Let's begin working through the assessment planning stage together. The exercises on the following pages will include examples for a fictitious program, a Bachelor of Science in Justice and Policy Studies (BS JPS). Our program is in a fictitious department, Justice Administration (JA), in a fictitious school, the School of Public Administration (SPA).

It is important to consider the institutional, school, and department mission statements in the assessment planning process. There are several reasons for this:

1. The institutional mission is the foundation upon which everything we do should be based. College mission statements, and in turn departmental mission statements, should flow from and directly support the overall institutional mission. It should not be difficult to "connect the dots" and see the relationships among an institution and the academic and non-academic units that compose it.
2. Accreditors will evaluate how well an institution executes its mission through its academic programs and other endeavors.
3. Because it can be easy to forget the importance of institutional, school, and department missions in all that we do, assessment planning time provides an excellent opportunity to call our attention back to these statements of who we are and what we are about. This may prompt some faculty to review school or department mission statements and consider whether it is time to update them. That, in turn, may prompt fresh thinking about curriculum planning or other activities. Although this is not the primary purpose of assessment planning, it is one example of the unexpected benefits that some faculty report as a result of this process.
4. Assessment outcomes must be directly related to the department mission (and, by extension, those of the school and institution). You will be asked to evaluate these relationships as we prepare to develop outcomes.



The ASU assessment team does not evaluate the quality of the mission statements prepared by our academic or non-academic units. We collect this information only to help our faculty to focus on the issues outlined above.

ASU Charter

ASU is a comprehensive public research university, measured not by whom we exclude, but rather by whom we include and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

School of Public Administration Mission Statement (Note: fictitious college)
The School of Public Administration (SPA) prepares students for public service careers in the not-for-profit and public sectors. The School strives to uphold the highest ideals of ethical and responsible public service and seeks to produce public leaders and managers who will exemplify those values in their professional practice. The administration and faculty of the School are committed to teaching, research, and social engagement that support and serve our local, regional, national, and global communities.

Does the SPA Mission Statement support the ASU Charter? The SPA Mission Statement supports the ASU Charter. It closely matches the emphasis on "assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.." It is not necessary for the mission statement of each college, school, department, or program to exactly match the institutional mission. If you review the mission statements of all academic and non-academic units within the University, you will find that each gives particular emphasis to those parts of the institutional mission that are related to its specific purpose; you will also find that, overall, ASU's many units support the institutional mission.

Department of Justice Administration Mission Statement (Note: fictitious department)
The Department of Justice Administration (JA) prepares students for professional careers in the criminal justice, social justice, and other law-related fields. The JA department provides its students a comprehensive and multidisciplinary education in the social, behavioral, historic, legal, and administrative aspects of the American system of justice. At the core of each JA academic program is the study and application of ethics-based decision making so that graduates are prepared to serve as ethical and responsible practitioners and leaders at the local, regional, or national levels in their chosen careers.

Does the department mission statement support the school mission statement? The JA mission statement supports the elements of the SPA Mission Statement. It might also be considered to give greater emphasis to some elements than others. If you review the mission statements of the other departments in this school, you might find that each gives particular emphasis to those mission elements most related to its specific purpose; you will also find that, overall, the SPA departments support the mission communicated in the SPA mission statement.

- ✓ Prepares students for public service careers in the not-for-profit and public sectors.
- ✓ Strives to uphold the highest ideals of ethical and responsible public service.
- ✓ Seeks to produce public leaders and managers who will exemplify those values in their professional practice.
- ✓ Teaching, research, and social engagement that support and serve our local, regional, national, and global communities.

Bachelor of Science in Justice and Policy Studies Program Mission Statement (Note: fictitious degree)
The mission of the BS in Justice and Policy Studies program is to educate the justice system's future leaders, policy makers, and practitioners. The BS JPS program provides a high-quality education in the history and foundations of the American system of justice as well as the current legal, social, ethical, and administrative skills necessary in an increasingly complex society. BS JPS graduates are prepared for further study at the graduate level or in law school, or for employment in the justice profession as researchers, administrators, or law enforcement officers.

Does the BS JPS Mission Statement support the JA Mission Statement? The BS JPS Mission Statement supports the elements of the JA Mission Statement. It might also be considered to give greater emphasis to some elements than others. If you review the mission statements of the other programs in this department, you might find that each gives particular emphasis to those mission elements most related to its program-specific purpose; you

will also find that, overall, the JA programs support the overall mission communicated in the JA mission statement.

- ✓ Prepares students for professional careers in the criminal justice, social justice, and other law-related fields.
- ✓ Provides students a comprehensive and multidisciplinary education in the social, behavioral, historic, legal, and administrative aspects of the American system of justice.
- ✓ Study and application of ethics-based decision making.
- ✓ Graduates are prepared to serve as ethical and responsible practitioners and leaders.
- ✓ Local, regional, or national levels in their chosen careers.

Exercise 1: Analyze your mission statements

Does your college's mission statement support the ASU Charter? Take a minute to review the mission statement for your college. Underline those parts of the ASU Charter that you believe are supported by your college's mission statement. Do you believe that your college's mission statement supports the ASU Charter very well? Somewhat? Not very well?

Does your department/school mission statement support your college's mission statement? Return to the college mission statement and underline those elements that are supported by your department/school mission statement. Do you believe that your department/school mission statement supports your college's mission statement very well? Somewhat? Not very well?

If you are unsatisfied with the degree to which any of your mission statements support those above them, you may want to initiate a later conversation with your colleagues.

Exercise 2: Select a program

What program in your department will you use for today's exercise? Please list the program below.

What do you want your students to do when they graduate? What hopes and aspirations do members of the program faculty have for program graduates three to five years after graduation? Some examples are:

- Employed in a field related to the academic program
- Further academic study (admission to graduate/professional school)
- Professional licensure/certification
- Contribution to scholarship of the discipline (research, publication, teaching)

We use program goals to help frame our thoughts about the expectations we have for our students. This will help as we begin to write learning outcomes in the next step. At ASU, we don't ask faculty to record these

goals on the Assessment Plan Template, but it is a good idea to store this information in departmental records and be sure the information is aligned with what appears in Degree Search.

For most programs, faculty will have more than one goal for their program graduates. For many undergraduate programs, there may be many possible educational and career paths that graduates will follow. You do not need to identify all possible paths; a small number will suffice. Over time, it is helpful to track program graduates in order to identify these long-range goals, but that is not necessary for this step. The purpose of this exercise is to help you to start thinking about the outcomes we will soon develop.

Program goals for the BS JPS program

There are several possible goals that we could identify for graduates of our BS JPS program. Some examples are shown below:

- We want our graduates to be employed as effective and ethical law enforcement officers or administrators.
- We want our graduates to be admitted to graduate school or law school.
- We want our graduates to work in government or non-profit agencies that serve the criminal justice profession.

Exercise 3: Use the space below to list two or three program goals for your program.

Do the goals above support the department mission statement? Review your department mission statement and underline those elements that are supported by the program goals above. If the goals you wrote do not support the program mission statement, take a moment to revise your program goals.

Choose one program goal from the list above that you will use for this exercise. You and your colleagues may decide to use the other program goals as you develop your full assessment plan. You may also decide to revise the list or add other program goals not listed above.

Our program goal for the BS JPS program is, "We want our graduates to be employed as effective and ethical law enforcement officers or administrators."

Exercise 4: Write a program goal for your program:

Think about the program goal you developed in the previous step. What kinds of knowledge or skills will students need to have when they graduate in order to achieve that goal? That body of knowledge and that skill set are your program learning outcomes.

Program outcomes are the intended learning outcomes of an academic program and include elements of a general education. They are the answers to the question, "What should program graduates know and be able to do?"

Many people find that developing learning outcomes for assessment plans is the most difficult and time consuming part of the process. If you adhere to the guidelines provided below, it will become much easier with practice, and you will avoid many problems with the subsequent steps. The time you invest now will save time later and will ensure that you are able to collect high-quality assessment data.

The learning outcomes you develop at this stage will provide a foundation for all your assessment work. The time and attention you give this activity will pay off later.

Program faculty should identify at least two, and no more than five, program outcomes during a single assessment cycle. These few outcomes on which you will focus during a single cycle are not intended to represent the full array of potential outcomes for the program. They will serve as a limited snapshot of student learning within an academic year, and you will have ample opportunity to study other outcomes in future years.

Programs with more than five important outcomes, particularly those specified by an external accrediting body, should divide those into subsets for consideration across two or more assessment cycles. There are many possible ways to approach this. Some examples are:

- Follow a predetermined rotation that includes a new subset of all program outcomes each year;
- Identify a small number of core outcomes that will be included every year, and rotate others each year;
- Identify a small number of core outcomes that will be included every year, and identify other outcomes that are focused on recent programmatic changes that should be evaluated; Identify a subset of outcomes, repeating those that are not met, and replacing those that are met with new outcomes; or
- Group the outcomes into categories such as content knowledge, application, research, communication, clinical skill, or others. Select one outcome from each category during each cycle.

Some examples of knowledge and skill areas are shown in the table below. This is not an exhaustive list; you may identify others that are appropriate for your academic discipline.

Knowledge	**Skills**	
Theory	Analysis	Application of theory/knowledge
Content knowledge	Clinical skills	Creativity
	Critical thinking	Design skills
	Ethics	Leadership
	Oral communication	Problem solving
	Research methods	Team participation
	Technical skills	Written communication

For today's exercise, we will develop a single program outcome in support of the long term goal you identified for your program.

There are several important guidelines to consider when writing program outcomes.

1. *Write outcome statements that flow directly from, and support, the program mission*. Think about the program mission statement you wrote previously. The connection to that mission (and those of the department, school, and college) should be evident in your program outcomes.

2. *Write outcome statements that relate directly to the academic discipline and reflect the knowledge and skills students should acquire through both general education and discipline-specific courses.* When possible, connect aspects of general education (e.g., critical thinking, quantitative reasoning, oral and written communication skills,

global awareness) to the curricular content of the major. You may consider writing or critical thinking to be very important for graduates of your program. If so, think about how you expect students to demonstrate those skills within the context of your academic discipline.

Consider the example below.

Weak	Better
Graduates of the BS in Justice and Policy Studies program will be critical thinkers.	Graduates of the BS JPS program will be able to analyze a current issue in criminal justice.

3. *Write outcome statements that are observable and measurable.* Focus on observable behaviors rather than what students think, understand, appreciate, etc. We cannot measure what students know or understand, but we can measure how they demonstrate evidence of knowledge and understanding. Avoid outcome statements that say, "Students will know …," or "Students will understand …." When you're tempted to use these, think about what students who *know* or *understand* can DO with that knowledge or understanding. Consider the example below.

Weak	Better
Graduates of the BS JPS program will understand the 4th Amendment to the Constitution.	Graduates of the BS JPS program will be able to analyze a current search and seizure issue.

4. *Write outcome statements that focus on knowledge and skills graduates should possess rather than curriculum design, department resources, faculty characteristics, or instructional methods.* Rather than saying that students will learn, students will increase understanding, students will acquire knowledge, etc., express outcomes in terms of what students will be able to do. Additionally, internal departmental outcomes are not assessed for this type of skill focused program assessment; your team should consider separately any issues of resources and dynamics that might improve functionality in the program.

Consider the example below.

Input Focused	Outcome Focused
Faculty will improve their content knowledge through participation in professional development activities. **OR** Department labs will be equipped with state-of-the-art instruments.	Graduates of the Art History program will be able to discuss the religious and political influences on 18th century European artists.

5. *For programs that have specialized accreditation or certification, write outcome statements that take those assessment expectations into consideration.* Some specialized accreditation organizations focus on curriculum design or other inputs rather than student outcomes. For those, you may want to write an outcome statement that addresses an input-based standard from the perspective of student-based outcomes.

Some specialized accreditors provide specific learning outcomes that institutions must measure. Although the language and format of those mandated outcomes may not adhere to our guidelines, you should use the specific language provided by the specialized accreditation agency. The only time you may need to restate an external standard would be to focus on the student, if the standard is focused more on resources or program operations. Additionally, please make it clear when an outcome comes directly from an accreditor when designing your assessment plan.

Consider the examples below.

External Standard	Outcome Aligned with Standard
American Bar Association Standard 704. TECHNOLOGICAL CAPACITIES: A law school shall have the technological capacities adequate for its current program of legal education and for program anticipated changes.	Graduates of the Juris Doctor program will demonstrate effective use of technology in legal research. (American Bar Association Standard 704. TECHNOLOGICAL CAPACITIES)

External Accreditation Outcome	Outcome Specified by External Standard
Accreditation Board for Engineering and Technology (ABET), Criteria for Accrediting Engineering Programs, Criterion 3, outcome f: "Understanding of professional and ethical responsibility."	Because this is a specific outcome mandated by ABET, we would use it as written and not modify it according to our guidelines.

6. *Write outcome statements that do not combine multiple outcomes in a single statement.* Avoid the temptation to bundle everything you value about your program into a lengthy outcome statement. Stay focused on clear and simple outcomes that will yield high quality information. There are times when an outcome must be rather complex in order to capture the complexity of a particular program. We sometimes speak of such outcomes as being so "interwoven" that to separate the elements into separate outcomes would somehow diminish the richness of the assessment. When evaluating your outcome statements, be careful not to lump multiple elements into a single statement unless you truly have a complex outcome for a complex program.

   Consider the examples below.

Multiple outcomes (5)	Single outcome (1)	Complex outcome (1)
Graduates of the ___ program will be **lifelong learners** who **understand the concepts of psychology** and can **apply those concepts** to **design** and **conduct research studies.**	Graduates of the ___ program will be able to **design a research study in the field of _____**.	Graduates of the _____ program will demonstrate the ability to function in a team-based interdisciplinary environment to solve complex problems.

One of the best ways to resolve problems with an outcome statement that consists of multiple outcomes is to collapse them into a single outcome. A very common example is an outcome that refers to program graduates' ability to "design and conduct research studies, and communicate the results of their research both orally and in writing." This is easily resolved by saying that program graduates will be able to conduct research. Through the use of a structured rubric, program faculty can separately evaluate students' ability to design a study, collect data, analyze data, interpret results, write research reports, and communicate their findings to others. Such a rubric will permit faculty to give feedback (and grades) for each of the separate components, and then arrive at an overall grade for the project. This same approach can be used for any individual or group written or performance projects that can be assigned to students. We will see later that this approach can also yield rich assessment information that can be used to identify specific strengths and weaknesses in your students' abilities.

7. *Write outcome statements that are short and concise.* Longer statements tend to be vague or include multiple outcomes.

8. *Write your outcome statements in the form of "Graduates of the _____ program will be able to _____;"* or *"Graduates of the _____ program will be prepared to _____."* This format will help you to avoid many of the problems described in the preceding paragraphs.

Don't be afraid to consider outcomes that may seem too vague or too difficult to measure. If you have an idea about an outcome that you consider important to your program but doesn't seem to fit these guidelines, contact the assessment team. We may be able to help you identify an appropriate measure for your outcome or to revise it into something more easily measured. There are high-quality ways in which you can measure critical thinking, creative thinking, ethical reasoning, and other important skills you may value, but are hesitant to use.

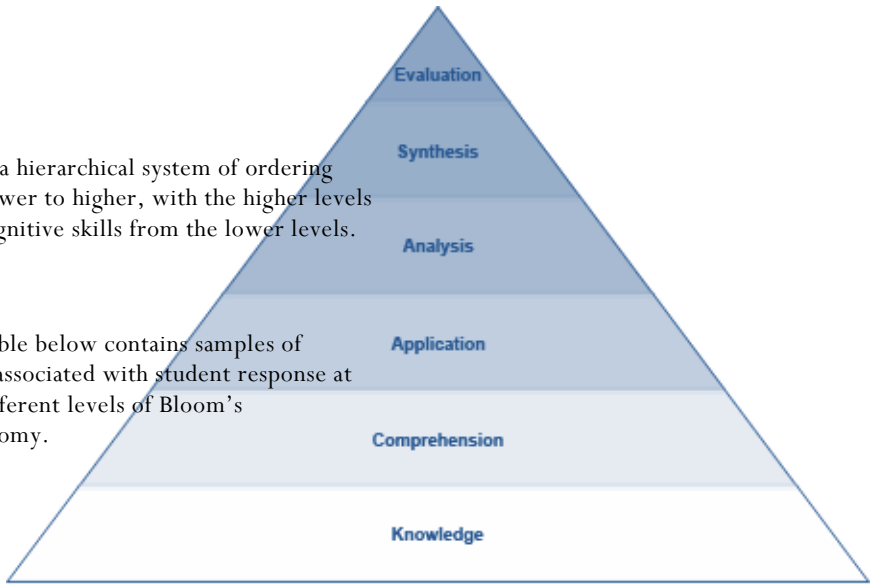
Are program outcomes for undergraduate and graduate programs different?

The choice of program outcomes for your assessment plans should always be guided by the program mission and long term goals for your graduates. Program faculty may identify program outcomes that seem appropriate for both an undergraduate program and a graduate program in the department, yet believe that it is important to differentiate between the two levels of study. Consider the following options.

- Select different cognitive levels for undergraduate and graduate program outcomes that express your expectations of students. For example, you might define an undergraduate program outcome at Bloom's comprehension level and a graduate program outcome at the evaluation level. A table of verbs for the cognitive domain levels of Bloom's taxonomy is shown later in this section.
- Use the same program outcome for an undergraduate and a graduate program, but identify different measures for students in the two programs. You might decide to use multiple choice exam items or a short constructed response question for the undergraduate measure and a complex project or comprehensive exam question for the graduate measure.
- Use the same program outcome and same measure for both the undergraduate and graduate programs, but develop one rubric for use in scoring undergraduate work and another for use in scoring graduate work. For example, you might develop a complex test question for use on the final exam in an undergraduate capstone course and for use as a master's level comp question. Because you expect more complexity and sophistication in your master's students' responses, you would write separate scoring rubrics for students at the two levels.

om's Taxonomy is a hierarchical system of ordering
king skills from lower to higher, with the higher levels
uding all of the cognitive skills from the lower levels.

The table below contains samples of verbs associated with student response at the different levels of Bloom's Taxonomy.



Bloom's Taxonomy of learning. Adapted from: Bloom, B.S. (Ed.) (1956) Taxonomy of educational objectives: The classification of educational goals. Handbook I, cognitive domain. New York ; Toronto: Longmans, Green.

			Critical Thinking		
Knowledge	**Comprehension**	**Application**	**Analysis**	**Synthesis**	**Evaluation**
Count	Associate	Add	Analyze	Categorize	Appraise
Define	Compute	Apply	Arrange	Combine	Assess
Describe	Convert	Calculate	Breakdown	Compile	Compare
Draw	Defend	Change	Combine	Compose	Conclude

Identify	Discuss	Classify	Design	Create	Contrast
Label	Distinguish	Complete	Detect	Drive	Criticize
List	Estimate	Compute	Develop	Design	Critique
Match	Explain	Demonstrate	Diagram	Devise	Determine
Name	Extend	Discover	Differentiate	Explain	Grade
Outline	Extrapolate	Divide	Discriminate	Generate	Interpret
Point	Generalize	Examine	Illustrate	Group	Judge
Quote	Give examples	Graph	Infer	Integrate	Justify
Read	Infer	Interpolate	Outline	Modify	Measure
Recall	Paraphrase	Manipulate	Point out	Order	Rank
Recite	Predict	Modify	Relate	Organize	Rate
Recognize	Rewrite	Operate	Select	Plan	Support
Record	Summarize	Prepare	Separate	Prescribe	Test
Repeat		Produce	Subdivide	Propose	
Reproduce		Show	Utilize	Rearrange	
Select		Solve		Reconstruct	
State		Subtract		Related	
Write		Translate		Reorganize	
		Use		Revise	
				Rewrite	
				Summarize	
				Transform	
				Specify	

Use the following steps to develop a program outcome.

Exercise 5: Begin to brainstorm about possible program outcomes for your program

***Step One*:** Review a long term program goal and think about the knowledge and skills necessary to prepare your students *to achieve that goal.* Let's start by reviewing our long term goal for BS JPS graduates:

We want our graduates to be employed as effective and ethical law enforcement officers or administrators.

That is a very large goal. In order for program graduates to become effective and ethical law enforcement officers or administrators, they will need to possess considerable content knowledge by the time they graduate. They should also have acquired at least some of the basic skills they will later use in their professional lives.

It helps to begin by brainstorming about the many possible knowledge areas or skills that students should acquire prior to graduation.

Step Two: *Review the examples of knowledge and skill areas.*

Step Three: Identify areas of content knowledge that are closely related. You may realize that some areas represent subsets of knowledge or skill represented on others. That is fine; just group these together in groups that make sense to you. As you do this, you may see some areas that you want to discard. Mark through them with an "X," if you want, but don't discard them just yet – they may give you other ideas. You may also begin to think of additional words you'd like to add to flesh out your ideas. You might find it helpful to cluster related ideas on a sheet of paper and draw a circle around each cluster. Use this time to focus more closely on the specific things your students should know and be able to do at graduation if they are to be prepared for your long term goal.

Step Four. Identify one area of content knowledge that you will use to develop a single learning outcome.

For the BS JPS program, I decided to use: "Ability to write policies." I noticed that it was too broad, though, so I added notes to remind me that I need to decide what kind of policies to focus on for my learning outcome. I decided to focus my outcome on writing good enforcement policies.

Exercise 6: Pick one knowledge area or skill (or a related cluster) that you will use for your outcome. Copy any additional notes you made below. Use this opportunity to narrow your focus on a specific knowledge area or skill.

Identifying only two to five program outcomes can seem like an impossible task if we don't follow this systematic approach.

Step Five: Review the guidelines detailed earlier, then write the first draft of a program outcome based on the knowledge or skill you chose for Exercise 6. Don't worry about perfection – you'll have an opportunity to review this draft and revise.

First draft – BS JPS program outcome:

BS JPS graduates who enter the law enforcement profession will have high clearance rates for their investigations.

Guidelines	Are the guidelines met?
Support program mission	☒ High clearance rates are important to any law enforcement agency, but unrelated to the BS JPS program mission. *Remember to base each program outcome on a long term goal to ensure consistency with program mission.*
Directly related to discipline	☒ The BS JPS program trains its students in criminal justice administration, not investigative techniques.
Observable and measurable	☑ Crime statistics are readily available through a number of public sources.
Focused on outcomes rather than inputs	☑ Solving crimes and closing cases is an outcome rather than a curricular input.
Consider external standards, if any	☑ No accreditation standards apply.
Avoid combining multiple outcomes	☑ This is a single outcome.
Short and concise	☑ This is not an overly wordy outcome.
Students will be able (or prepared) to _____	☒ This does not describe a specific student ability.

Exercise 7: Write the first draft of a program outcome for your program. Write your outcome statement in the shaded box below. Next, check the boxes for guidelines that your outcome meets.

Program Outcome	Are the guidelines met?
	☐ Support program mission ☐ Directly related to discipline ☐ Observable and measurable ☐ Focused on outcomes rather than inputs ☐ Consider external standards, if any ☐ Avoid combining multiple outcomes ☐ Short and concise ☐ Students will be able (or prepared) to _____

Step Six: Write second (or third, etc. draft) of your outcome. Continue to evaluate using the guidelines, and revise until all six guidelines have been met.

Revised Draft - BS JPS program outcome:

BS JPS graduates will be able to apply knowledge of social, behavioral, and constitutional issues to develop well-written policies that are legally defensible and socially acceptable to key stakeholders.

Guidelines	Are the guidelines met?
Support program mission	☑ This outcome is directly related to our long term goal, so we know that it supports the program mission.
Directly related to discipline	☑ This outcome is directly related to Justice and Policy Studies.
Observable and measurable	☑ There are many ways in which faculty can ask students to demonstrate their constitutional knowledge and policy-writing skills.
Focused on outcomes rather than inputs	☑ Demonstration of content knowledge and skills is outcome-focused.
Consider external standards, if any	☑ No accreditation standards apply.
Avoid combining multiple outcomes	☒ This is multiple outcomes combined in a single statement:
Short and concise	☒ This is somewhat wordy – a red flag for multiple outcomes.
Students will be able (or prepared) to _____	☑ This is in the correct form.

Final Draft – program outcome:

BS JPS graduates will be able to write appropriate enforcement policies.

Guidelines	Are the guidelines met?
Support program mission	☑ This outcome is directly related to our long term goal, so we know that it supports the program mission.
Directly related to discipline	☑ This outcome is directly related to Justice and Policy Studies.
Observable and measurable	☑ There are many ways in which faculty can ask students to demonstrate their constitutional knowledge and policy-writing skills.
Focused on outcomes rather than inputs	☑ Demonstration of content knowledge and skills is outcome-focused.
Consider external standards, if any	☑ No accreditation standards apply.
Avoid combining multiple outcomes	☑ This is a single outcome.
Short and concise	☑ This is short and concise.
Students will be able (or prepared) to _____	☑ This is in the correct form.

Exercise 8: Write the second (or third) draft of your program outcome. Continue to revise until all guidelines are met.

Program Outcome	Are the guidelines met?
	☐ Support program mission ☐ Directly related to discipline ☐ Observable and measurable ☐ Focused on outcomes rather than inputs ☐ Consider external standards, if any ☐ Avoid combining multiple outcomes ☐ Short and concise ☐ Students will be able (or prepared) to ________

Program Outcome	Are the guidelines met?
	☐ Support program mission ☐ Directly related to discipline ☐ Observable and measurable ☐ Focused on outcomes rather than inputs ☐ Consider external standards, if any ☐ Avoid combining multiple outcomes ☐ Short and concise ☐ Students will be able (or prepared) to ________

Program Outcome	Are the guidelines met?
	☐ Support program mission ☐ Directly related to discipline ☐ Observable and measurable ☐ Focused on outcomes rather than inputs ☐ Consider external standards, if any ☐ Avoid combining multiple outcomes ☐ Short and concise ☐ Students will be able (or prepared) to ________

Use the space below to write your final program outcome.

Identify at least two measures for each outcome. The first measure must be a direct measure, and the second can be direct or indirect.

A direct measure is one in which students demonstrate their learning through a performance of some kind. Direct measures include digital portfolios, exams, projects, etc. where the students themselves actually demonstrate their knowledge or skill. An indirect measure is one that provides information from which we can draw inferences about student learning. Indirect measures do not call on students to demonstrate their knowledge or skill, but rely on information reported either by the students themselves or by some third party about the level of student knowledge or ability. Surveys and employment data are the most common indirect measures.

Examples of direct and indirect measures are shown below.

Direct		Indirect
Digital Portfolios	Design projects	Student surveys and focus groups
Capstone (project/paper)		
Standardized tests (ETS field tests, for example)	Practical clinical assessments	Exit surveys and interviews
Presentations/oral defenses	Artistic creations or performances	Alumni surveys and interviews
Classroom exams or quizzes	Classroom discussions	Employer surveys and interviews
Classroom/homework assignments	Online discussion threads	Job placement data
Course projects	Licensure/certification exams	Admission to graduate/professional programs
Papers (research, term, creative, etc.)	Publications/presentations	Course evaluations
Internships or practicums	Master's theses or doctoral dissertations	

There are several important guidelines to consider when identifying appropriate measures for your outcomes:

1. *Avoid creating additional tests or other assessment activities simply to satisfy your assessment data collection needs.* It should be possible to identify digital portfolios, projects, exams or other measures of student learning that already occur as part of your existing instruction and testing activities. If you have difficulty identifying appropriate measures for an outcome, you may want to consider whether students are being adequately tested on the outcome – or whether the outcome is an appropriate one for your program. If the outcome is an important one, but is not adequately measured, program faculty will need to identify appropriate measures.

2. *Course grades are not appropriate measures of student learning. It is appropriate to use the grade on a specific exam, project, etc. that specifically measures student learning on the outcome.* Course grades are based on overall satisfaction of course requirements rather than performance on a specific program-level outcome. Those course requirements typically include several course-level outcomes that are likely related to more than one program outcome. Course grades frequently include extra credit for attendance, class participation, or other things unrelated to program outcomes. Course grades alone do not provide specific information about the concepts mastered by students or those concepts that proved challenging – important information for faculty to consider if they want to improve student learning over time.
   Consider the following example of two students who successfully completed JPS-442 (Policy for the Justice Administrator). The course content included a historical review of common justice policies,

exercises in analyzing the effectiveness of past and present policies of a metropolitan police agency, and a final exam in which students analyze samples of policies and recommend improvements. The instructor considers attendance to be important, so 10% of the course grade is based on attendance. Students who miss three or more class sessions receive no credit for attendance.

Assignment	Weight	Student A	Student B
Attendance	0.10	100.0	0.0
History quiz	0.15	90.0	92.0
Homework	0.15	90.0	96.0
Midterm	0.30	89.0	98.0
Final	0.30	88.0	100.0
Total		***90.1***	***87.6***
	Course Grade	**A**	**B**

If JPS faculty chose to use grades from JPS-442 as a measure of policy-writing skills, it would appear that Student A had graduated with better policy-writing ability than Student B. In reality, Student B performed much better than Student A on the only direct measure of policy writing from the JA-442 class.

Other measures that would be appropriate for this program outcome include the following:

- The JPS-442 final exam that required students to evaluate policies and make recommendations.
- Alumni surveys that ask program graduates employed as justice administrators how well the program prepared them to write policies. (indirect)
- Surveys of senior officials who supervise program graduates employed as justice administrators about how well prepared program graduates were to write policies.

Consider the following example of an assignment that could be used as a final exam for an undergraduate capstone course or a graduate-level comprehensive exam question.

Choose a current social issue that presents an enforcement issue to law enforcement personnel. Write a policy to address enforcement of that issue for a municipal police department. Your response should include the following:

- *a historic summary of the issue you have chosen and an explanation of its development as a social issue as well as a law enforcement issue.*
- *an analysis of the cultural, political, or other societal factors that led to the issue you have chosen and how your policy addresses those factors.*
- *a discussion of the legal aspects surrounding enforcement of the issue you have chosen. You should address any constitutional, statutory, administrative, or agency policies that are related to your issue and discuss how your policy will withstand legal challenges to its implementation.*
- *a list of the groups of stakeholders who may have strong opinions on the issue or on any enforcement policy that might be implemented. For each stakeholder group, provide a brief description of that group's likely concerns, how they might react if your policy is implemented, and how you would respond to any negative reactions.*
- *a brief discussion of how you might evaluate the effectiveness of the policy, if implemented.*

A complex exam item such as the one above can be a valuable assessment tool. This item would be a very good measure for our JPS policy writing program outcome. It would also provide rich information about student knowledge and skills on other likely program outcomes such as legal knowledge, critical thinking, analytic writing, and problem solving. The use of a high-quality scoring rubric to evaluate student performance on such an item would yield information about the learning of individual students as well as overall performance of program graduates. The information gained from such items is valuable for assessment purposes because it can inform faculty decisions about continuous improvement to the curriculum.

3. *Course completion is not an appropriate measure of student learning.* Avoid using completion of a single course or block of courses as a measure. The issues are the same as with course grades.

4. *Identify at least one direct measure.* The second measure can be direct or indirect.

5. *Identify a specific measure.* Rather than saying "tests," say, "Final exam in JPS 428, Senior Capstone." Rather than "research papers," say, "Research paper in JPS 393, Social Issues in Law Enforcement." By identifying a specific exam or assignment in a specific course, you are creating a data collection plan for your program assessment. For surveys, indicate the specific item(s) that will be used to measure the outcome. For example, "Exit survey item that asks the extent to which the BS JPS program helped students to develop their analytical thinking skills." Otherwise, you may be leaving your data collection to chance and fail to collect important information about your students' learning.

   There are two important exceptions to this rule:

   - Some programs prefer to include student work from multiple sections of the course that includes the exam, project, etc., described in the measure. More information about this approach is included in the sampling section later in this handbook. If you choose to include multiple sections, you may want to indicate that by adding a notation such as "multiple sections," or "a sample of sections."
   - Some programs will select complex student work from a variety of different upper-level courses. The work may include papers written in response to different assignments, portfolios, student projects, and a variety of artifacts. These artifacts can be used for a secondary review using rubrics such as the VALUE rubrics or components of the Lovitts' rubrics. This is a particularly strong assessment practice that will yield high-quality information about student learning, because it includes a broader snapshot of student performance that can be evaluated using a common set of criteria. Although we do not require programs to use this approach, we encourage faculty to consider it because of the valuable information to be gained. If you decide to use such a secondary analysis, you may indicate that your measure will be "a secondary analysis of sampled student work from all sections ABC-400, ABC-402, and ABC-446, using the VALUE rubric for [*outcome*]."

6. *Don't write a long description of the measure.* It is not necessary to describe the content of an exam or assignment, a rationale for its inclusion in your assessment, or the scoring method you will use. This level of detail is appropriate to record in any program or departmental notes or minutes you will maintain. For your assessment plan, you only need to list the specific measure (final exam in [*course ID, course name*], senior capstone paper, oral presentation of JPS-301 [*course ID, course name*] project, dissertation, etc.).

7. *Don't combine multiple measures as one.* Avoid saying, "exams and assignments in JPS-442." You may decide to combine the scores for multiple quizzes or homework assignments, to identify a specific subset of test items that relate to the outcome, or to identify a specific subset of survey items that relate to the item. It is appropriate to do so, and you may want to describe your measure as an aggregate (*e.g.*, mean score) on the quizzes or items used.

8. *Align Measure with Outcome.* Ensure that the measure that you are writing directly illuminates the outcome you are exploring. If the outcome intends to assess writing skills, a direct measure of a classroom writing example or an indirect measure from a survey can be used to assess a student's writing abilities.

Assessment Measures and Resources

The most commonly used assessment tools are exams, portfolios, rubrics, and university data (e.g., surveys, course evaluations).

- **Rubrics:** For any subjective assessment (portfolios, papers, capstones, dissertations, etc.), rubrics are the most common method for determining student attainment of outcomes. However, when designing a rubric there are a few considerations to be made. First, is the work being addressed holistic or analytic? The difference between these types is that a holistic rubric will result in a single score, thus the criteria being assessed consists of related properties that will be assessed holistically. An analytic rubric consists of criteria that are assessed and scored separately resulting in a composite score. The other element to consider is whether the rubric consists of checklists, ratings, or descriptions. A checklist rubric consists of checkboxes that indicate whether a criteria exists or not. A rating scale rubric determines the level to which a criteria exists in a work or not. A descriptive rubric keeps the ratings but replaces the checkboxes with spaces where brief descriptions can be written in to explain the rating. For programs that want to include outcomes that may seem ambiguous or difficult to measure, consider using AAC&U's Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics. The rubrics were developed as part of a large FIPSE-funded project. More about the project can be found at http://www.aacu.org/value/ . The rubrics can be downloaded, free of charge, https://www.aacu.org/value-rubrics. Although the rubrics were developed for undergraduate education, they can also be used to measure graduate work.

- **Exams:** Either as an objective or subjective assessment, exams can be used for outcome indicators for the completion of a course. When designing an exam both for a course as well as a program assessment, it can be helpful to design a blueprint for the exam. This will help ensure all learning goals are represented and balance among conceptual understanding and thinking skills is struck. This will make the writing of the questions for the exam easier as it is clear what knowledge and which skills a student must demonstrate to meet the learning outcome. Additionally, the test blueprint will make it easier in the review process to pair questions back to their appropriate outcomes, as well as allowing for an in-depth review of the demonstrated skills of each section of the test.
- **Portfolios:** ASU has become a national leader in the use of digital portfolios, and they are an effective assessment tool as they allow students to display a wide variety of learning and skills. Portfolios can show the value added of a student's education as it can demonstrate development across the program. Additionally, portfolios require student reflection upon their work for inclusion in the portfolio, allowing the student to choose how to document their achievement of learning outcomes. This process further involves the student within the assessment process and allows for a very holistic review of learning for students and faculty.
- **University Data:** Though indirect, it is important to consider the attitudes, dispositions, and values students assign to their education and learning outcomes. The best method for collecting this information is through the graduating and alumni surveys or the course evaluations. This data indicates students' reflections on their education as a whole in addition to students' behaviors after obtaining the program's learning objectives. This data can provide new insight into growing fields and expanding learning opportunities to be explored for current students.

Direct measure for BS JPS program: Policy analysis paper in JPS-442 (Policy for the Justice Administrator)

Indirect measure for BS JPS program: ASU undergraduate alumni survey items that ask whether students are employed and how closely related their job is to their undergraduate program at ASU.

It is appropriate – and often preferable - to use the same measure for more than one outcome. Capstone projects, doctoral dissertations, and other complex culminating student products typically

measure student performance on multiple program outcomes and are rich sources of information about students' ability to apply knowledge from across the curriculum.

Exercise 9: Write a direct measure for your outcome. Use the space below, and check the guidelines in the right column to identify any problems with your measure.

Use the space below to write a direct measure for your outcome. Check the guidelines in the right column to identify any problems with your measure.

Measure 1.1 (Direct)	Are the guidelines met?
	☐ No unnecessary tests for assessment purposes ☐ No course grades ☐ No course completions ☐ At least one direct measure ☐ Specific measure ☐ No long description ☐ No multiple measures ☐ Align Measure with Outcome

Exercise 10: Write an indirect measure for your outcome. Use the space below, and check the guidelines in the right column to identify any problems with your measure.

Use the space below to write an indirect measure for your outcome. Check the guidelines in the right column to identify any problems with your measure.

Measure 1.2 (Indirect)	Are the guidelines met?
	☐ No unnecessary tests for assessment purposes ☐ No course grades ☐ No course completions ☐ Specific measure ☐ No long description ☐ No multiple measures ☐ Align Measure with Outcome

For each measure, a performance criterion will be used to determine the level of performance necessary to ascertain whether student performance on the measure indicates that the program outcome has been achieved. Not all students in a program will perform perfectly on every measure, so program faculty must identify a threshold above which they will be satisfied that, on the whole, students who graduate from the program possess the knowledge or skill specified in the outcome.

Performance criteria must be identified prior to the collection and analysis of assessment data. When setting performance criteria, it can be tempting to set unreasonably high "nothing but the best" standards or to set unreasonably low "guaranteed to show success" standards. Both of these practices can be defeating. Over time, it is far more beneficial to a program and its students to set reasonable expectations and work toward meeting them.

Avoid setting a performance criterion that says that 100% of students will _____. When tempted to set the threshold at 100%, consider the following scenario. If even a single student in a large program did not meet your expectations on the measure, would you conclude that your program graduates do not possess the knowledge or skill of the outcome? Probably not. Think of a reasonable standard, and set the threshold at that level.

Programs that set performance criteria so low that they are assured of meeting their outcomes present a number of issues. Unreasonably low standards deprive faculty in those programs of the opportunity to identify strengths and weaknesses in their students' performance, thus depriving present and future students of the benefits of program improvements that might otherwise occur. The low standards communicate to current and potential students that the faculty have low expectations for them. A program that establishes low expectations for student performance may not push students to perform at their maximum potential and may not attract the most qualified applicants.

A performance criterion is written as a statement indicating that some percentage of students will perform at or above a certain level on the measure. Examples:

- 80% or more of students will earn a grade of B or higher on the final exam.
- 75% or more of students will earn a rating of "Meets Expectations" or better on the research paper.
- 90% or more of student papers will be evaluated at a level 3 or higher using the VALUE rubric for Ethical Reasoning.
- 85% of alumni survey respondents will report that they are currently employed in a field that is related or closely related to their degree program.
- 80% of exit survey respondents will report that the BS JPS program contributed "Quite a Bit" or "Very Much" to the development of their critical thinking skills.
- 75% of sampled papers reviewed will be evaluated at a level of "Satisfactory" or higher using a faculty-developed rubric.
- 80% of doctoral dissertations will receive a rating of "Very Good" or "Outstanding" for methods using the Lovitts (2007) rubric for [*academic discipline]*.

Course grades and course completion are not appropriate for use in performance criteria.

The master's thesis and doctoral dissertation are excellent measures of student learning, but can present a challenge for faculty writing performance criteria. Many programs will set performance criteria that state that a percentage of students will successfully defend the thesis or dissertation on the first attempt. On the face, this seems to be a suitable approach. However, most graduate faculty support and closely supervise their students' thesis and dissertation work and don't schedule the defense until the work is satisfactory. When this is the case, a performance criterion based on success rate of first time defenses is an artificial threshold, and the program has guaranteed that it will meet the outcome. This practice also deprives programs of the opportunity to examine differences in the level of their students' performances and identify opportunities for improvement.

We recommend using the rubrics presented in Lovitts' (2007) work on the assessment of doctoral assessment. Her work with doctoral faculty at institutions from across the U.S. yielded rubrics for a variety of graduate disciplines that describe the characteristics of the elements of a dissertation (*e.g.,* literature review, methods, analysis, etc.) at four levels: Outstanding, Very Good, Acceptable, Unacceptable. The rubrics can also be used as a model for rubrics to be used for the evaluation of master's theses, for applied or performance projects, or for other disciplines. We encourage programs to use rubrics such as these for a secondary review of theses and dissertations. Such a review is distinct from the traditional defense process, and faculty may or may not choose to share the results of individual reviews with their students. Some programs have found it useful to share rubrics with entering graduate students as a means to inform them at an early stage about expectations regarding the quality of their graduate work. For large programs, it is not necessary to review and evaluate every thesis, dissertation, or project. It is acceptable to review a representative sample of student work.

Programs that utilize rubrics to evaluate the quality of theses or dissertations will write a performance criterion that indicates that a percentage of students will earn a rating of Acceptable or better on the element that relates directly to the outcome.

There are several important guidelines to consider when identifying appropriate performance criteria for your outcomes:

1. *The performance criterion must be directly related to the measure.* If the measure is an exam, the performance criterion will be a threshold of performance on the exam. If the measure is a survey item, the performance criterion will be threshold of respondents' ratings on that particular item.
2. *Write performance criteria in this format: "XX% of students will earn a grade/rating of YY or higher on the [name of exam/project]."* Or *"XX% of students will perform at or above expectations on the [licensure exam, dissertation] based upon the faculty developed rubric."* or *"XX% of respondents will report that [use scale points from survey item].*
3. *Course grades and course completion are not appropriate for use with performance criteria.* As with measures, it is important to focus on the specific exam, project, etc., that will be used to measure student learning on the outcome of interest.
4. *Performance criteria related to the thesis or dissertation must reflect a standard other than passing on the first attempt.* These measures represent the culmination of a student's program of study and should be analyzed at specific levels for their achievement across a spectrum or within a singular area. Faculty developed rubrics are the best resource to use for a performance criteria of these measures.

Exercise 11: Write one performance criterion for each measure.

Use the space below to write a performance criterion for your direct measure. Check the guidelines in the right column to identify any problems with your measure.

Performance Criterion 1.1 (Direct Measure)	Are the guidelines met?
	☐ Directly related to the measure ☐ Written in correct format ☐ No course grades or completions

Use the space below to write a performance criterion for your indirect measure. Check the guidelines in the right column to identify any problems with your measure.

Performance Criterion 1.2 (Indirect Measure)	Are the guidelines met?
	☐ Directly related to the measure ☐ Written in correct format ☐ No course grades or completions

As part of your assessment plan, you will identify a sampling strategy for each measure. It is important to think about the sampling during the assessment planning process. This will form the data collection plan for your assessment activities and will help to ensure that data collection is not left to chance or overlooked until after the academic year has passed.

It is not necessary to select a statistically representative student sample, although you may choose to do so. It is important, however, that you collect and analyze data from a group of students that is *reasonably representative of the group of program majors about whom inferences will be drawn*.

Rather than sampling students, faculty may decide to sample course sections. For a large program that offers many sections of a course that has an exam or project that will be used as an assessment measure, it may be preferable to use student work from a sample of those course sections. As explained above, the goal is to identify a reasonably representative group of program majors in your data collection. You should not focus on honors sections; nor should you systematically exclude them.

As you plan your sampling strategy for each measure, first think about the number of students who will be included in the data collection, and who those students will be. **You should include only students who are program majors – not students from other programs who were enrolled in a class used for data collection.** Remember that we are drawing inferences about program graduates – not all students who happen to enroll in a particular course, but who may be majors in other programs.

The number of students who could potentially be included in your data collection may be very large if you include all your major students enrolled in a large class; it may be a smaller number if you included only a sample of those students; or it may be only one or two students if the program is a small one. As you decide whether to include data for all program majors or for a smaller sample, you should also consider the complexity of the data and any analysis that will be required. If your measure is a relatively simple one, such as exam scores, survey responses, or first-time pass rates on a certification exam, sampling would not significantly reduce the amount of time and effort required. If the measure is a more complex one that will require a rubric to yield sub-scores for separate components of the assignment, it may be time consuming to enter the data for a large number of students and may choose to do so only for a *reasonably representative sample of program majors.* Likewise, if you engage in a secondary evaluation/analysis of theses or dissertations using Lovitts' rubrics (or others developed by program faculty), you may decide to include only a sample of student work in your secondary review.

The program majors included in your sample may or may not be students who will graduate in the current academic year. If the measure is a course exam, for example, the class enrollment may include majors who are at different points in their program completion, and will not necessarily graduate at the same time. This may also be true for a capstone course. Although most students in the capstone will be seniors who are about to graduate, there may be students whose graduation will not occur during the present academic year. Do not exclude those students. Although the purpose of assessment is to provide information about the knowledge and skills of program graduates, we collect the information at different points during those students' education, and may include information from students who are about to graduate as well as those who have one or more semesters of coursework before they complete their studies.

It is unlikely that you will know the number of students for whom you will have data. Although you will determine your sampling strategy at this time, you will describe your sampling and the number of students included when you submit your assessment report in September.

Consider these practical suggestions for identifying and documenting your sampling strategy:

1. The sampling strategy statement reflects a **before the fact** decision about how you will select a reasonably representative group of **program majors** AND minimally answers the following questions:
    a. How many students will be included in data collection?
    b. Who will those students be?
    c. What timeframe is associated with data collection? This is dictated by when the course is offered during the academic year.
    d. Other unique parameters (e.g., specific course section/SLN; specific level of student, i.e, junior, senior)?

2. The only students who should be included in your sampling are program majors. Do not include students who are enrolled in a class used for data collection that are associated with other programs.

Examples of sampling strategies include:

- All program majors enrolled in a specified course during a specified semester:

  100% of _____ program majors enrolled in _____ (insert Course Prefix/Number) _____ (insert term(s)).

- Smaller percentage (e.g., 50%) of program majors enrolled in a specified course during a specified semester:

  50% (insert number) of _____ program majors enrolled in _____ (insert Course Prefix/Number) _____ (insert term(s)).

- Program majors enrolled in a specified course and all sections of a multiple section course during all three academic semesters:

  ____% (insert number) of _____ program majors enrolled in all sections of _____ (insert Course Prefix/Number) for all three AY2011-2011 terms.

- Program majors enrolled in a specified course and specific course section section(s) of a multi-section course offered during a specific semester, state:

  ____% (insert number) of _____ program majors enrolled in _____ (insert Course Prefix/Number) _____ (insert Course Section/Schedule Line Number) _____ (insert term).

- Program majors representing a select level (e.g., junior, senior) of students, enrolled in a specified course during a specified semester:

  ____% (insert number) of _____ program majors _____ (insert level) students enrolled in _____ (insert Course Prefix/Number) _____ (insert term).

Strive to make your sampling strategy CLEAR, CONCISE, and SPECIFIC.

There are no hard and fast rules for your assessment sampling strategy. Any approach that will include data that is reasonably representative of the knowledge and skill of your program majors is an appropriate one.

Exercise 12: Write one sampling strategy for each measure.

Write a sampling strategy for your direct measure.

Write a sampling strategy for your indirect measure.