UNIVERSITY OF SOUTH FLORIDA

A PREEMINENT RESEARCH UNIVERSITY

Academic Assessment Handbook

Revised November 18, 2021, Version 3.4

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Introduction

Our Mission

The mission of the Institutional Effectiveness (IE) unit in USF's Office of Decision Support is to ensure compliance with regulations and policies and institutional accreditation. Additionally, we promulgate good assessment and evaluation practices across the university and align these assessment activities with other quality monitoring and continuous improvement activities, including strategic planning, college reviews, program reviews, administrative unit reviews, budgeting, and the development of accountability plans. The unit maintains a focus on the continuous improvement of learning and student development by guiding faculty and staff in the use of methodologically rigorous inquiry designed to allow practitioners to identify and implement curricular and programmatic enhancements to increase the level at which students achieve learning outcomes.

Assessment

Assessment at USF is an ongoing, continuous quality improvement exercise. The process of assessment is designed to facilitate programmatic improvements while meeting the requirements of our institutional accreditor, the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), and the Florida Board of Governors (BOG). The IE unit oversees and facilitates the process of assessment, including the integration of assessment into annual administrative unit reviews, annual reporting, and budgeting processes.

System for Assessment Management (SAM)

SAM is an online assessment management system used to enter, edit, and manage all assessment plans and reports for academic programs (undergraduate, graduate, certificate), and academic and student support services. Please note that the system is optimized for use with Google Chrome only.

Using this Handbook

This handbook will explain and illustrate the process of assessment at USF, including how to access, navigate, and input information into SAM. The handbook also includes an appendix of resources to assist in enhancing the compliance of programmatic assessment activities with external requirements.

Contact Us

Please visit https://bit.ly/assessUSF, send any questions or comments to assessment@usf.edu, or call Dr. Rebecca Gibbons, Phone: 941-359-4505

PART 1: POLICY & PROCESS

Assessment Overview

What is Learning Outcomes Assessment?

1. In short, assessment is a process, including systematically measuring the extent to which students have achieved learning outcomes, reporting the results, and subsequently increasing the level of achievement through various action items.[1]
2. At the program level, assessment is a consistent process of collecting, reviewing, and using student learning information to improve learning and development. Program assessment involves making learning expectations explicit and public, setting appropriate criteria and standards for learning quality, systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards, and using the resulting information to document, explain, and improve performance.[2,3]

Why Assess?

The primary purpose of assessment is to improve student learning and student success. **USF's primary goal** is "to promote the lifelong success of well-educated, highly-skilled, and adaptable alumnae/alumni who lead enriched lives, are engaged citizens and thrive in a dynamic global market." The process of assessment allows programs to identify what students should know and be able to do by the end of an educational program (called Program Learning Outcomes, or PLOs) and determine the degree to which the PLOs are met; furthermore, the process of assessment requires that programs use PLO achievement information to improve future student learning.

Regulations and Requirements

Assessment is mandated by both the **Florida State University System Board of Governors (BOG)** and our institutional accrediting body, the **Southern Association of Colleges and Schools Commission on Colleges (SACSCOC)**. USF policy also reflects the mandate for conducting assessment:

SACSCOC Requirement 8.2
The institution identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of seeking improvement based on analysis of the results.

USF Policy 10-060
Student learning outcomes at the University of South Florida are designed for the evaluation of programs. Every academic and student support program at USF must have an active assessment plan on file in the institutional assessment management system. All undergraduate academic programs must meet the requirements of BOG Regulation 8.016, Student Learning Outcomes Assessment. This Regulation requires the ongoing assessment of critical thinking skills, communication skills, and content/discipline knowledge and skills.

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[1] AALHE, Association for the Assessment of Learning in Higher Education (2020) Foundation Statement #1: What is Assessment in Higher Education?

[2] Angelo, T. (1995). Reassessing (and defining) assessment. *The AAHE Bulletin*, *48*(2), 7-9.

[3] Palomba, C., & Banta, T. (1999). *Assessment essentials: planning, implementing, and improving assessment in higher education.* San Francisco, CA: Jossey Bass.

BOG Regulation 8.016

(1) Policies and Procedures

(a) Each board of trustees shall require its university to establish a process for certifying that each baccalaureate graduate has completed a program with clearly articulated expected core student learning outcomes.

(b) Each university shall develop processes to ensure that:

1. program faculty develop and publish an Academic Learning Compact for each baccalaureate program that, at a minimum:

a. outlines expected core student learning outcomes in the areas of content/discipline knowledge and skills, communication skills, and critical thinking skills;

b. takes into consideration perspectives of appropriate constituencies (including but not limited to potential employers and graduate programs) regarding the knowledge and skills graduates need in the global marketplace and society; and

c. lists the types of assessments students may encounter in the program (e.g., capstone projects, juried performances, standardized exams, common embedded exam questions, portfolio requirements, etc.);

2. program faculty develop methods for assessing student achievement of the expected core student learning outcomes within the context of the program;

3. university personnel use program evaluation systems (which may include sampling) to evaluate the program and related assessment practices to analyze their efficacy in determining whether program graduates have achieved the expected core student learning outcomes; and

4. university personnel use the evaluation results to improve student learning and program effectiveness.

Compliance & Quality in Assessment: CITL Partnership

Assessment on the programmatic level is primarily described in this Handbook, and regulated by SACSCOC and the BOG. The IE unit, the host and facilitator of the process of assessment and generator of this Handbook, partners with the Center for Innovative Teaching and Learning (CITL) to provide support, development, and resources. IE ensures that the program meets minimum compliance requirements, while CITL serves as a resource to help interested programs improve their assessment practices beyond minimum compliance into high-quality continuous quality improvement. The common problem for faculty and program directors is translating the assessment process already in place into SACSCOC and BOG compliant language. While all programs have well-developed exams, essays, performance evaluations, etc., IE generally works with faculty to help translate these tools into the language needed to generate a compliant assessment plan/report, whereas CITL focuses help in designing improved assessment processes. Regular classroom assessment is not in the purview of the regulations and compliance areas listed above; it is still an essential component of creating effective learning environments and can also be supported through CITL.

Assessment Plans & Reports

Three-Year Process of Assessment Overview

To facilitate compliance with all stakeholders, IE has devised a three-year process that allows for programs to focus on continuous quality improvement in the achievement of the Program Learning Outcomes (PLOs). The process is depicted in Figure 1.

Figure 1. Overall Three-Year USF Process of Assessment.

Assessment is an ongoing process, so a three-year cycle of planning, collection/analysis, and improvements is used at USF that allows for distributing the workload. At the start of each year, the program submits a **Plan** for data collection, and at the end of each year, the program completes a **Report** on the year's data.

Year One

- Start of the Year
  - For programs that have completed a full three-year process, reflect on the past results and discuss past improvements.
  - Establish, update, or reaffirm PLOs based on the goals of the program. Not all PLOs must be assessed,[4] but all must be listed under broad program goals.
  - Develop, update, or maintain a curriculum map showing the courses in which PLOs are introduced, reinforced, mastered, and assessed.
  - Submit a **Plan** with methods that will be used to assess SLOs.
- During the Year
  - Collect the first year's PLO data.
- End of the Year
  - Analyze the data from Year One and produce a **Report** that summarizes the assessment findings, reflecting on the methods and achievement.

Year Two

- Start of the Year
  - Reflect on data and processes from Year One.
  - Submit the **Plan** to and collect additional data in the methods identified in Year One.
    - If necessary, the **Plan** could incorporate an improved data collection process or methods if either need to be changed based on the results from Year One.
- During the Year
  - Collect data
- End of the Year
  - Analyze PLO data and produce a **Report** that summarizes the assessment findings.
  - Based on the first two years of data, generate an action plan for using the assessment results to improve curriculum or instruction**.**

Year Three

- Start of the Year
  - Reflect on data and processes, implement action items identified in the Year Two **Report.**
  - Submit a **Plan** to and collect additional data in the methods identified in Year One.
- During the Year
  - Implement the action plan designed in Year Two, document implementation of the action plan through meeting minutes, assignment descriptions, etc., and continue to collect data.
- End of the Year
  - Collect and analyze PLO data and produce a **Report** on final results from Year Three, including the trend data from the first two years, reflecting on the impact of the curricular or pedagogical changes that were made, attaching evidence of change implementation.

[4] Exception: In undergraduate programs, one PLO in each Goal area of Discipline-Specific Knowledge and Skills, Critical Thinking, and Communication must be assessed each year per BOG.

Annual PLO Plan & Report Requirements

Each year of the three-year process, typically after the spring or summer semester (see Figure 2[5]), there are two assessment documents to be submitted: A **Report** on the year's findings and a **Plan** for the next year.

Plan: The **Plan** has three major components, (a) the Program Learning Outcome Statement(s) for the PLOs to be assessed, (b) the specific Method of Assessment for each PLO, and (c) Performance Target(s) for each PLO. Descriptions of each of these components follow in the Handbook. The **Plan** must be submitted at the start of each year to reaffirm whether the PLOs, methods, or targets will remain consistent or change.

Report: The **Report** is the venue for faculty/staff to enter their results into (d) the Assessment Results section and complete (e) the Use of Assessment Results section. In Year Two, section (e) must detail the specific action steps that will be taken based on the data to improve the student experience, learning, or another program component. In Year One and Year Three, the Use of Assessment Results section is designed to allow for reflection on the implementation and success of the assessment plan and action items, including evidence such as meeting minutes that document the action plan implementation in Year Three.

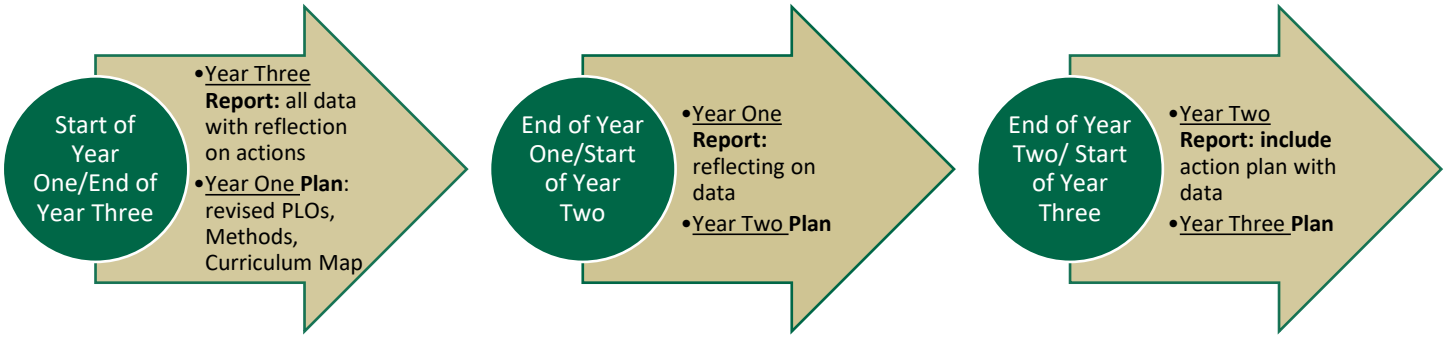


Figure 2. Timeline of submission dates

[5] Individual colleges are assigned to a specific month during the year to submit their annual assessment reports and plans for all majors, certificates, academic and student support services units, and institutes and centers. These can be found on the Assessment website.

Plan and Report Structure

The annual assessment **Plans** and **Reports** for each curricular offering (i.e., major or certificate program) are housed in the System for Assessment Management (SAM), which is an internally developed online database. Access to SAM is granted by IE and is integrated with the USF single sign-on network security allowing each user to login with Net ID and password. SAM is set up so each plan is customizable. The various required components are demonstrated in Figure 3 and described in more detail in the USF Academic Assessment Template and Assessment Standards.

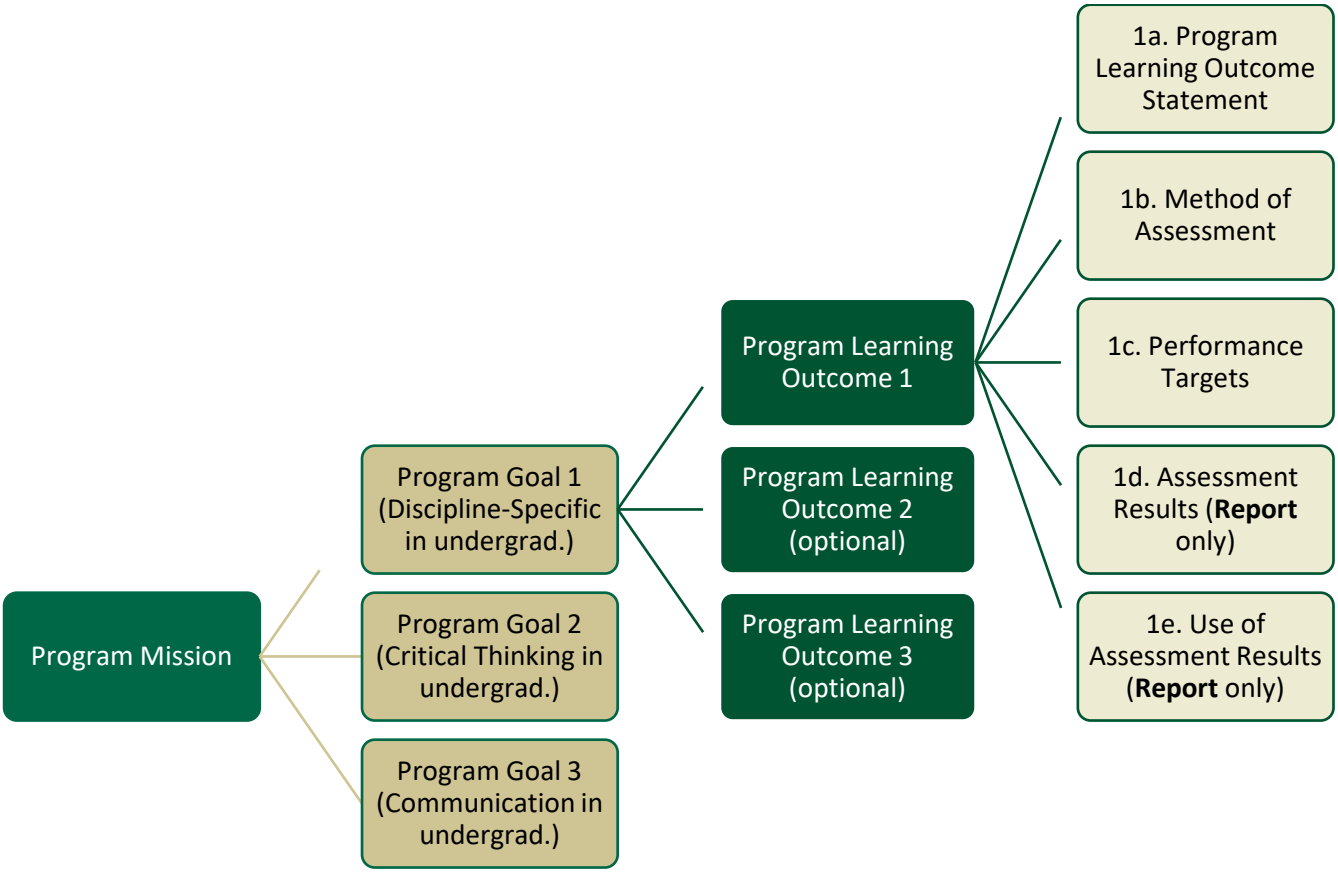


Figure 3. SAM component structure.

Academic programs must input their mission statement and program goals, which, once input, are carried over annually. It is possible to edit these each year, but not recommended. Per BOG regulation, undergraduate programs must have three program goal areas: content/discipline-specific knowledge and skills, communication skills, and critical thinking skills**.** Under each program goal, there can be one or more program-level student learning outcomes (PLOs). Undergraduate programs must assess one outcome in each of the three required goal areas in each process. For each PLO under each goal, there are various required input areas as detailed in the figure; for new programs, IE has generated a worksheet for the development of these components, found in the Appendix. For ongoing assessment, IE has established an Academic Assessment Template and a set of Assessment Standards in compliance with the SACSCOC requirements and the BOG regulation. IE reviews and provides feedback on each submission based on compliance using the rubrics contained in this Handbook.

PART 2: COMPLIANCE

USF Academic Assessment Template

Name of the Program:

CIP Code:

Program's Mission Statement *(A clearly stated purpose that links program to institutional mission)***:**

For undergraduate programs, BOG Regulation 8.016 requires program faculty to publish an Academic Learning Compact (ALC) containing outcomes aligned with three Goals: Discipline-knowledge and skills, communication skills, and critical thinking skills. For all other programs, the faculty can choose the number and nature of the goals.

Program Goal 1 ***(What is the program trying to achieve? What does an ideal graduate know and do?):***

1a. Program Learning Outcome Statement, or PLO statement *[Clearly state what* ***students will be able to*** *do upon completion of the degree program. Ensure PLO is aligned to the program mission. PLO statements are generated in Year One and should not be changed in Year Two or Year Three without justification.]*

1b. Method of Assessment *[Describe the combination of ways information is gathered about how well students are achieving learning outcomes (test items, student work, portfolios, surveys, focus groups, interviews, etc.,* ***but not*** *grades). Describe the assessment process and context: when, where, how, and who will be assessed by whom; expected variation in the assessment across courses and sections; and student motivation. If sampling, describe the method and explain its appropriateness. Include details about stakeholder involvement. Stakeholders may include faculty, students, staff, employers, alumni, etc. Methods are generated in Year One and should not be changed in Year Two or Year Three without justification.]*

1c. Performance Target *[State a specific target that will signify program success in delivering its program goal. Ensure it aligns with the student learning outcome and methods of assessment. Provide a logical rationale for why the target is appropriate. Targets are generated in Year One and should not be changed in Year Two or Year Three without justification.]*

1d. Assessment Results *[****Report*** *only, Detail qualitative and quantitative results of the assessment. Diagnose strengths and weaknesses across criteria used to assess each learning outcome. Document* if/*how the actual assessment process differed from what was planned. Describe stakeholder involvement in analyzing and reflecting on results.]*

1e. Use of Assessment Results *[****Report*** *only, In Year One, reflect on what the results mean as far as goal achievement for the program. In Year Two, based on the results, develop evidence-based hypotheses about what is affecting student learning. Consider the current curriculum, institutional characteristics, teaching methods, and published literature, etc. Describe a plan for actionable "Next Steps", including details for how to track changes made and the results of those changes. In Year Three, reflect on what the changes made in Year Two accomplished regarding goal achievement for the program.]*

Assessment Standards

IE has engaged in the process of generating Assessment Standards to provide program faculty and staff with insight into the minimum requirements for compliance in each section of SAM. These are summarized in the Assessment Plan/Report Review Checklist:

Assessment Plan/Report Review Checklist	Yes	No	N/A
1. PROGRAM LEARNING OUTCOME STATEMENTS:			
a. Describe an expectation for students' knowledge, attitude, and/or behavior.			
b. Align to the program mission and goals.			
c. Are clear, observable, and measurable.			
d. Employ an action verb.			
2. METHODS OF ASSESSMENT:			
a. State and describes the assessment instrument.			
b. Indicate how the instrument specifically measures the stated PLO.			
c. Are distinct from cumulative grades or overall passing rates.			
d. Describe the assessment context, including evidence for the instrument's accuracy and precision (validity and reliability).			
e. Indicate the sample.			
f. Address all the rubric's requirements (if used).			
3. PERFORMANCE TARGET(S):			
a. Is quantifiable.			
b. Specifies the threshold of success and indicates the percentage of students that will reach the threshold.			
c. Aligns with the PLO and method of assessment.			
4. ASSESSMENT RESULTS (Report only):			
a. Align with the PLO, Method of Assessment, and Performance Target.			
b. Include the total number of students assessed and the percent of the total population assessed.			
c. Include the number of students that reached the benchmark.			
d. Provide sufficient statistical information about the results.			
5. USE OF ASSESSMENT RESULTS (Report only):			
a. Interpret and analyze the results; provide reflection.			
b. Include actionable "next steps" the program will take; include "evidence of seeking improvement…" (Specific to Year Two)			
c. Refrains from using the phrase such as "we will continue to monitor…" If results are positive, reflection on effective practice is included.			

Mission Statement

This section should contain the degree program's mission statement. Mission statements can be usually found on the degree program's website. Double-check that what is entered in SAM matches the department or degree program's mission. If both align, then no edits are required.

Program Goals

Program goals should comprise the knowledge, skills, and competencies each program expects its graduates to have mastered by graduation. Program goals are broad, over-arching statements that are central to each program's curriculum. They are not intended to be and should not be measurable outcomes. **Florida BOG requires undergraduate programs to have program goals related to at least the following three areas:**

1. Mastery of content/discipline-specific knowledge and skills
2. Demonstration of critical thinking skills
3. Demonstration of communication skills

Undergraduate programs are free to add more program goals. Graduate programs need to provide their own program goals with a minimum of at least one program goal for each graduate program. Each certificate program, both graduate and undergraduate, must also have a minimum of one program goal. Each program goal should be aligned to at least one PLO.

Program Learning Outcome (PLO) Statement (a)

The PLO Statement is the first subsection of the five-part student learning outcome section and is a specific statement about what students will know and be able to do. PLOs are organized under a program goal and are measurable outcomes of that goal. In turn, each PLO has a specified method of assessment. For example, under the 'Communication' program goal, a program may have the following program learning outcome statement: "Students will be able to orally present and defend their original research projects."

PLO Assessment Standards

a. Describes an expectation for students' knowledge, attitude, and/or behavior.

The assessment process looks at what the program does to facilitate learning and knowledge acquisition for students, not simply what students do in the program. The PLO should describe students' set of skills, beliefs, and knowledge after the program; in other words, measuring PLO achievement will answer the question: how effective is the program in what it claims to do?

In the PLO section, do not state what students will do in the program, such as write theses or take exams. These are assessment instruments and belong in the Method of Assessment section. In the PLO section, state skills students will acquire from the program that they will demonstrate through their theses or exams.

- Incorrect PLO statement: Students will write a thesis.
- Correct PLO statement: Students in the (name of the program) will be able to present defensible conclusions based on an investigation of pertinent primary and secondary sources. The PLO specifically refers to the ability that students will acquire from the program: "the ability to present defensible conclusions". Then, in the method of assessment section, you may state that students will write a thesis to demonstrate the above PLO.

Keep in mind that students achieve different learning outcomes and skills at different points of time during their educational career, and some learning outcomes are stepping stones for others. For example, there is a difference between assessing graduating students and assessing students entering their junior year. If you assess graduating students, you only obtain a summative snapshot of their progress through the program. You

may only get the following information: 20% of graduates could not apply some specific skill. On the other hand, if you assess students entering junior year, or in other words, students who are about to take upper-level courses, you will get different kinds of information. Having this kind of information will allow faculty to intervene, make changes to the lower-level curriculum, and make sure that students understand the basics before taking upper-level courses. Therefore, it is important to indicate to which students the stated SLO is directed. For example sophomore students, graduating students, students taking a required capstone course, students completing the core sequence of the courses, students entering their senior year, etc.

b. Aligns to the program mission and goals.

The PLO should be specifically tied to the program. If you have two programs with identical sets of PLOs, the implication is that these are identical programs. If students learn identical things in programs A and B, then program A is identical to program B; and thus, one of the programs should be eliminated.

Each program is designed to give students a unique set of skills and abilities. For example, although undergraduate degrees in biomedical science and chemistry have a majority of shared courses, these degrees prepare students for different careers; therefore, they should have different content knowledge learning outcomes. **Communication skills PLOs and critical thinking skills PLOs may be shared.**

c. Is clear, observable, and measurable.

The PLO should be stated in a manner that facilitates measurement by students demonstrating some skill, behavior, and/or knowledge.

- Incorrect PLO statement: Students will be good citizens. This is an example of a Program Goal, because it is a desired outcome, but is stated without specificity. Consider instead the following example.
- Correct PLO statement: Students will be able to apply the Amendments to the Constitution of the United States in various situations. This skill constitutes the fact of being a good citizen, but it is also observable and measurable. As a result, this outcome naturally lends itself to the assessment method. You may ask students to write an essay asking students to apply their knowledge of the amendments to their life, or you may design embedded exam questions that present a case and ask students how amendments can be applied to that case.

d. Employs an action verb.

Because PLOs are meant to depict a student's knowledge, skills, and attitudes at some point in time, they must include an action verb that details the unique outcome. See the example below of a poor verb choice for a PLO:

- Incorrect PLO statement: Undergraduate students in physics will be able to *understand* the basic laws of electricity and magnetism. The word "understand" is inappropriate for use as a PLO because it does not include sufficient detail regarding the knowledge a student has about the laws referenced. To clarify this PLO, the faculty and program staff should consider what someone who does understand the laws would be able to do with that understanding; that is, they should select an action verb.

A resource that many faculty members rely on to identify appropriate action verbs is Bloom's taxonomy, a sample of a hierarchical model of classifying cognitive skills in terms of complexity. See example: https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/. The reason that many faculty members rely on Bloom's taxonomy is that being able to apply the knowledge is better than having the factual knowledge of the material, and so on. These levels can serve as a guide to choose the most appropriate cognitive skill for the level of your program (Bachelor's vs. Master's vs. Doctorate), and for the level of the class within the program (introductory course vs. capstone course). Students at the beginning of their education may focus more on knowing and explaining the material, while more advanced students should apply, analyze, and synthesize the material.

- Correct PLO statement: Undergraduate students in physics in their *freshman* year will be able to *list* and *define* the basic laws of electricity and magnetism.

- Correct PLO statement: Undergraduate students in physics in their *senior* year will be able to *apply* laws of electricity and magnetism to a wide range of situations.
- Correct PLO statement: During their third year, *doctoral students* in physics will be able to *produce* a scientific paper of a publishable quality that constitutes an original contribution to their chosen field of specialization.

Note that as students advance through their educational careers, they are required to demonstrate cognitive skills of higher complexity; advancing from knowledge to application, and eventually to the synthesis of new knowledge.

Method of Assessment (b)

This section describes how students are assessed on the learning outcome. Each PLO must have a clearly stated method of assessment. The Method of Assessment section can be considered similar to a Methods section in an educational research study wherein measures are employed to determine the achievement of the PLOs.

Method of Assessment Standards

a. States and describes the assessment instrument.

In as much detail as possible, describe the assignment, activity, etc., that will be used to assess the PLO. Common assessment instruments include essays, written student work including discussion board responses, theses/dissertations, presentations, oral reports, performances, portfolios, open-ended (or multiple choice) embedded test questions, lab reports, internship or practicum evaluation forms, exams, or standardized tests.

b. Indicates how the instrument specifically measures the stated PLO.

Justify how the selected assessment instrument specifically addresses the stated PLO. Is the PLO a criterion in the rubric? Are there specific embedded questions? Example: The PLO states that the student will be able to do x, y, z. If the assessment instrument is a multiple-choice test, please provide the statement that aligns x, y, z to specific questions in the test. If the assessment instrument is a rubric is used to assess a term paper, please specify which rubric components measure x, y, z.

c. Is distinct from cumulative grades or overall passing rates.

Course grades are inappropriate for continuous quality improvement; they summarize the overall performance of the student (and may include unneeded information such as attendance and class participation). This type of assessment will not necessarily yield data that can be used for improvement. A student with a 70% overall test score may fail in one objective which may need to be improved. One option is to measure each aspect separately, report those ratings, and then average them together.

Example of an unacceptable assessment: Students will write theses and the professor will then assign grades to each thesis. A year later you will see the following distribution: 20 students received an “A”, 40 students received a “B”, 15 students received a “C”. What can you do with this information? How can you improve the program? What are common problems? What difficulties do students encounter while writing a thesis? Which skills are underdeveloped? Is it writing, research skills, ability to defend an argument, or gaps in the knowledge of the discipline? If there are gaps in discipline-specific knowledge, then in what area? **Letter grades do not give useful information that can be used to make adjustments to the curriculum.**

However, you may use some of the existing graded assignments if you can link PLOs to specific grading criteria (rubric components/specific exam questions). For example, you may say that PLO is measured using specific test questions in the chapter test, or that a PLO is measured with grades from a specific column of a grading rubric. The key distinction between compliant and noncompliant grade usage is the specificity and alignment with the PLO.

d. Describes the assessment context, including evidence for the instrument's accuracy and precision (validity and reliability).

The context for the assessment can be divided into two types: (1) Course-embedded assessment and (2) assessment outside of the course. Examples of the former include a project in a capstone course or a final exam in one of the core courses; examples of the latter include a qualifying oral exam at the end of the program, a portfolio of student work drawn from multiple classes, internship evaluation forms, or a licensure exam administered outside of the coursework. Regardless of what assessment type is selected, please explain the assessment context. If administered outside of a course, describe under what circumstances the assessment was administered and address the motivation for students to participate in the assessment. Detail variations in the method and/or context of assessment within a course and/or across multiple sections of a course.

- Example (1) of a course-embedded assessment: "The final project in the ABC XXXX capstone course will be used as an assessment instrument. The rubric used to score the final project includes a criterion for conciseness of argument and is scored on a 4-point scale from Capstone to Benchmark. The course instructor provides one rating of each final project, and one other member of the department scores a random sample of final projects to measure inter-rater agreement."
- Example (2) of an assessment outside of the course: "The assessment instrument is a rubric used to rate an oral qualifying exam that students have to pass to complete a degree program. An Oral Examination Committee comprised of three professors drawn from the student's core courses [ABC XXXX, ABC XXXX, ABC XXXX, ABC XXXX] and elective [varies year to year] coursework will conduct the evaluation."

Regardless of the context, detail which students are involved in the assessment: first-year students, graduating seniors, all students in the program, etc. Remember that assessment methods cannot be reliant on external determinants such as the acceptance to a journal or conference proceedings, and must be designed so that all students within the program are represented in the assessment.

Additionally, describe faculty participation in choosing, developing, validating, administering, and analyzing the assessment. The key to accurate methods of assessment is the involvement of subject matter experts in the discipline or outcome area. These experts, most often faculty but also professionals in the field, have the greatest insight into all possible occurrences of the learning outcome in instruction, so their input on multiple-choice questions, essay prompts, or the quality of research projects, etc. is a strong indication of accuracy (sometimes referred to as validity).

Precision, or reliability, is addressed in specific ways for specific types of assessments and is addressed in a Methods Supplement in this Handbook. While not every measure of reliability is required, there should be some indication that the method of assessment can be expected to produce results that are similar in similar situations; two students with the same level of knowledge should achieve the same score on a multiple-choice exam, regardless of other contexts. Some things that can threaten reliability are biased questions, such as word problems all referring to the same context which was used in one section of a course but not another.

e. Indicates the sample.

Will you assess all the students or sample of the students? Please provide all the relevant statistical information and sampling techniques employed. When drawing a sample, be sure to include all modes of course delivery (e.g. online, hybrid, traditional classes) and all instructional sites. ***Note*: if you do not indicate the use of a sample in the Plan, the Report should not include a sample; this creates misalignment between the Method and Results sections.** If the method of assessment was altered, this can be edited in the Report to reflect the enacted practice.

f. Addresses all the rubric's requirements (if used).

If employing a rubric, provide specific information on how it was developed and evidence for the accuracy of data. We encourage the use of established rubrics for which there is evidence to support using the data collected (such as the American Association of Colleges & Universities VALUE Rubrics), properly cited. If developing a rubric internally, include a statement on how evidence for accuracy and precision were or can be collected, especially evidence for more than one subject matter expert involved in writing the rubric before data is collected and evidence for inter-rater agreement after data is collected.

i. **What are the criteria of the rubric?** For example, the criteria in the Oral Communication VALUE Rubric are Organization, Language, Delivery, Supporting Material, and Central Message. When a student gives a presentation, the criteria stated above are all assessed using individual rows on the rubric. This gives an individual score for each criterion as well as the ability to calculate an overall score. Rubrics designed to score various types of student work typically include distinct criteria. For example, a rubric to score a student research paper may include criteria for grammar, thesis statement, quality of evidence, and structure. Each PLO is referring to a specific component of student knowledge, skills, or attitudes, and as such, should be assessed using rubric criteria that align with the action verb in the PLO. In most cases, a whole rubric score is inappropriate. In all cases, alignment between the text of the PLO and the method of assessment is required.

ii. **What is the range of the rubric score and what does each rating mean?** For example: if you state that students will be evaluated on a scale from 1 to 5, please elaborate on what is meant by each rating (getting 1 means "unacceptable," getting 2 means "emerging," and so on). A rubric is a subjective assessment instrument and should be rigorously defined. This can be facilitated by copy and pasting the rubric directly into SAM, although descriptions with sufficient detail are allowed.

iii. **Who will be evaluating the students?** Compared to the use of test questions that can be either right or wrong, the use of rubrics has some degree of subjectivity. One rater may think that the student deserves a 3 out of 5 on this criterion, another rater thinks that the student deserves a 4 out of 5; different raters may interpret aspects/criteria of scoring differently. Multiple raters are needed to improve the reliability of the measurement. Please state who are the raters, as well as the number of raters (at least two). Because rubrics are inherently subjective, only individuals who know the subject area well should evaluate the students. Usually, these individuals are faculty members or sometimes professionals outside of the university. Students are not permitted to serve as evaluators.

iv. **How is inter-rater agreement addressed?** Inter-rater agreement (IRA) is the degree of agreement between raters. In other words, the method of assessment needs to state how drastic differences in scores (if any arise) between two reviewers would be addressed. Common methods of addressing the inter-rater agreement include: (1) raters discuss until they reach an agreement regarding the rating, (2) if raters cannot agree on the rating, then a third rater is utilized. **SACSCOC requires percent agreement stemming from rubric calibration to ensure reliability in rubric scoring across multiple raters.** Almost all assessment types require multiple raters and therefore also require IRA: for example, oral presentations, portfolio review, or performances need multiple faculty raters to review each student's submission. From these independent faculty scores, a final score must be produced. The method of assessment section should include a statement on IRA, and data supporting IRA should be included in the Assessment Results in the Report.

Note: the following assessment types **do not** need inter-rater agreement

- Standardized tests
- Embedded test questions that are multiple-choice, or are structured so that only one true answer exists.

For example: If the program is using a sample of essays from qualifying courses to assess critical thinking skills, then the method of assessment section should include:

1. A statement on the type of assessment: essay format, from what class, etc.
2. Information on how the student papers will be evaluated to assess critical thinking skills and information on the prompt of the papers.
3. How the sample of student work was obtained (from what classes, was it by random selection, stratified random selection, etc.).
4. Percentage of the program's students to be included in the sample.
5. How many faculty members will rate each student paper (must be two or more).
6. How faculty scores will be tabulated to produce a final score for each student (how IRA will be addressed).
7. Information on how the rubric was developed and validated.

The simplest way to address IRA is to count the number of times when evaluators assign identical scores to students and divide it by the number of all scores; this is known as percent agreement. The following example may help clarify the matter:

Imagine that there are ten students and two evaluators scoring students on a Likert scale between 1 and 5. The following table displays the hypothetical scores evaluators assigned to each student.

Student No.	Evaluator No. 1 Score	Evaluator No. 2 Score
1	3	3
2	4	5
3	2	2
4	2	4
5	4	4
6	3	3
7	5	5
8	1	3
9	2	2
10	4	4

Notice that scores for Students Nos. 1, 3, 5, 6, 7, 9, and 10 are consistent between evaluators; while scores for student Nos. 2, 4, and 8 are different. In other words, evaluators agree 7 out of 10 times; therefore, the percent agreement for this assessment is 70%. You may establish a minimum required percent agreement target, falling below which would make you revise the rubric (e.g., percent agreement below 70%).

Note: ***you may define agreement to be within ±1 point; meaning, that in the above example scores for student #2 would also be considered in agreement, but not for students # 4 and 8.*** There are other more robust ways to determine inter-rater agreement, including inter-rater reliability measures such as Cohen's kappa, Scott's pi, Fleiss' kappa, inter-rater correlation, concordance correlation coefficient, intra-class correlation, and Krippendorff's alpha; however, calculating percent agreement is the minimum for SACSCOC compliance.

Performance Target (c)

Performance targets are internal predictions made by the program regarding the level of student achievement for that learning outcome. This section may be short and must only include a numerical prediction. The prediction should be stated in terms of the rubric's parameters. For example, if the rubric rates students on a scale of 1-5 for that learning outcome, the performance target should include a percentage of students and a predicted achievement rate.

Performance Target Standards

a. **Is quantifiable.**

The performance target should be stated in terms of the assessment instrument. For rubrics, it should be stated in terms of the overall rating or criterion score. For embedded questions, it should be stated in terms of the number of questions answered correctly.

Setting performance targets is up to the program; however, the benchmark should be meaningful and appropriate for making decisions regarding the program. Saying that 100% of students will reach the threshold may not be realistic. Additionally, stating that 30% of students should reach the threshold may not be appropriate. Please note, the assessment process should produce results that will help improve curriculum and/or instruction. The goal is ***continuous quality improvement***.

b. **Specifies the threshold of success and indicates the percentage of students that will reach the threshold.**

Performance targets are internal predictions made by the program regarding the level of student achievement for that PLO. For example: "Program implementation will be considered a success if 90% of the sample will achieve a final score of 4 or higher for this assessment." This is the extension of the previous standard. In addition to specifying the benchmark result, specify how many students (percentage) will reach that threshold.

c. **Aligns with the PLO and method of assessment.**

The performance target should be related to the method of assessment and learning outcome. Please verify that there is a common thread throughout your assessment plan. This is what we want students to know, here is how we will measure it, here is the numerical target that would indicate the program is successful in providing knowledge and skills to its students.

Assessment Results (d)

The assessment results section should mirror the wording in the performance target section, but include the results of the assessment. **The total number of students assessed on each learning outcome should be indicated in this section.** If using a sample, the final number included in the sample should be indicated, as well as the adjusted percentage of the total number of students in the program. For assessment methods that require multiple raters, the final scores are sufficient for this section instead of including the independent scores, statistical analysis, and final numbers for each student.

Assessment results can be reported in terms of the percentage of students achieving each category of the rubric. For example, if a program used a rubric that assessed students on a scale of 1-5, they might report the results as:

- Students achieving a final score of 5/5 was approximately 75% (n = 30).
- Students achieving a final score between 4-4.9/5 was 20% (n = 8).
- Students achieving a final score of 3-3.9/5 was 5% (n = 2).
- No students achieved a final score lower than a 3.

Assessment Results Standards

a. **Aligns with the PLO, Method of Assessment, and Performance Target.**

Results should be worded in terms of the performance target.

b. **Includes total number of students assessed and the percent of the total population assessed.**

How many students were assessed? If you were using a sample, what proportion of the total population is the sample?

c. **Includes the number of students that reached the benchmark.**

How many students reached the stated benchmark?

d. Provides sufficient statistical information about the results.

Provide all statistical information that is needed for meaningful interpretation (mean, median, standard deviation, etc.).

Use of Assessment Results (e)

The Use of Assessment Results section is very important and is the portion of the assessment plan that is most commonly completed incorrectly. This portion describes intended improvements at the program level. It is an important distinction to note that this is an assessment of the program, not its participants. Recall that the Use of Assessment Results section should be completed with reflection on the data and potential routes for improvement in the Year One **Report**, then detailing action items in the Year Two **Report,** and reflection on the success or lack thereof of the implementations as they were acted in the Year Three **Report.**

Use of Assessment Results Standards

a. Interprets and analyzes the results; provides reflection.

This is the most important section of the assessment – this is the reason why assessment is required by institutional and specialized accreditors throughout the world. As a university, we should continuously improve. Each program should look for weak areas in the curriculum and address them. **This is an assessment of the program, not its participants or its instructors.** For this section, please look at your results and interpret them. What do the data show? Are there any anomalies? Does anything stand out? Provide as much narrative as needed for meaningful interpretation. What insights arose from this process? What did you learn? This reflection process is required in all three years of the process.

b. Includes actionable "next steps" the program will take; includes "evidence of seeking improvement…"

In Year Two of the three-year process of assessment, it is required that action steps are identified by the program based on the interpretation of the results. Programs should look at and think about what curricular or pedagogical improvements or developments will be implemented at the program level in light of the assessment results. This section is not for programs to describe how they will change their assessment plan to yield greater levels of student achievement or to elaborate on the assessment results in any way. In addition, this section is not meant for programs to relay how they will "fix" students to achieve greater results (e.g., advising students to seek tutoring, limiting access to program courses).

- Example 1: If the Critical Thinking assessment resulted in a significantly lower number of students achieving at the performance target, then the Use of Results section could include how and where the curriculum will reinforce critical thinking skills, what adjustments will be made to the curriculum, how the program faculty will address the deficiency and other future improvements or developments.
- Example 2: If the Critical Thinking assessment resulted in sufficient scores to indicate that the measured learning outcome had been met, then the program should include a statement that the program is functioning well in this area and a statement of the projected area of concentration for the subsequent year's assessment. Ask "What about the program is making the environment effective for student learning? How can we continue to promote this environment?"

c. Refrains from using the phrase such as "we will continue to monitor…" If results are positive, reflection on effective practice is included.

The use of the above phrase violates the continuous quality standard found in most accreditation principles. Assessment is not linear and finite; it is continuous and cyclical. If all performance targets have been met within a plan, the program is asked to develop new ways of assessing PLOs, disaggregating results, or increasing the rigor of the curriculum that improve new areas aside from what has already been "perfected."

Compliance Review

The IE office reviews all assessment materials for their compliance with these Assessment Standards and provides feedback based on the following rubrics. The feedback appears in SAM and is most often communicated to faculty members and staff through email.

Overall Rating Rubric

Overall Rating	On Hold	Non-Compliant 2	Non-Compliant 1	Compliant
	IE has approved a delay in the submission of the plan/report.	The Plan/Report does not meet minimum SACSCOC/BOG standards, is missing, or has not been corrected based on previous comments.	Minor revision or clarification is needed for some elements of the Plan/Report.	All elements of the Plan/Report meet SACSCOC/BOG standards.

Year One Plan Component Ratings Rubric

Component Ratings	Missing Element(s)	Unacceptable	Needs Work	Acceptable
Learning Outcome Statement	No learning outcome statements is present.	The learning outcome statement is not stated as a learning outcome or is stated in terms of assignment, course, or degree completion.	The learning outcome statement is unclear or not aligned with the mission, goals, and/or curriculum map.	The learning outcome will produce actionable results for program improvement and is aligned with the mission, goals, and curriculum map.
Method of Assessment	No stated method of assessment.	Methods of assessment are inappropriate, or not connected/specific to the learning outcome.	The method needs further description or refinement of the scoring criteria and/or process.	Scoring criteria and process are clear and appropriate for the method of assessment. The sample is identified if applicable. **All rubric areas are met.**
Performance Targets	No performance target present.	Performance targets are not aligned with the method.	Performance targets need minor revisions for clarity.	Performance targets are appropriate and well-stated.

Year One Report Component Ratings Rubric

Component Ratings	Missing Element(s)	Unacceptable	Needs Work	Acceptable
Assessment Results	No assessment results present.	Assessment results are present, but unclear how they relate to methods.	Assessment results are unclear or without interpretation.	All data is reported appropriately with a brief interpretation of the results.
Use of Assessment Results	No reflection on results is present.	Reflection on results is not aligned with outcome, method, and/or data.	Reflection on assessment of results is at surface level.	Reflection on results indicates a sincere desire to improve student learning.

Year Two and Year Three Plan Component Ratings Rubric

Component Ratings	Missing Element(s)	Unacceptable	Needs Work	Acceptable
Learning Outcome Statement, Method of Assessment, and Performance Target	Those from Year One have been deleted.	Those are radically changed from Year One.	Those are changed somewhat from Year One without justification.	Those remain as established in Year One, or include justification if changed.

Year Two Report Component Ratings Rubric

Component Ratings	Missing Element(s)	Unacceptable	Needs Work	Acceptable
Assessment Results	No assessment results present.	Assessment results are present, but unclear how they relate to methods and Year One results.	Assessment results are unclear or without interpretation.	All data is reported appropriately, including trends from Year One to Year Two.
Use of Assessment Results	No plan for utilization of results is present.	The action plan does not say how results will be used to improve or change the program.	The action plan is not grounded in the interpretation of the assessment results.	With a meaningful interpretation of the data, the action plan is developed and includes a change to implement in the program.

Year Three Report Component Ratings Rubric

Component Ratings	Missing Element(s)	Unacceptable	Needs Work	Acceptable
Assessment Results	No assessment results present.	Assessment results are present, but unclear how they relate to results from Year One and Year Two.	Assessment results are unclear or a three-year trend is missing.	Data from all three years are appropriately reported with meaningful interpretation concerning the program.
Use of Assessment Results	No reflection on results or evidnece of implementing the action plan is present.	Reflection on results is unrelated/not aligned with trends shown in the data. Evidnece of implementing the action plan is not included.	Reflection on results extends only at surface level. Evidnece of implementing the action plan is included.	Based on reflection, any continued practices or changes needed are identified and discussed. Evidnece of implementing the action plan is included.

Compliance Review Process

Each year, assessments are used to submit required reports to the deans, the provost's office, and the BOG. They are also gathered for five-year accreditation requirements submitted to SACSCOC. IE manages the submission of these reports to the required organizations using the **Plans** and **Reports** submitted by each program annually. While each program is responsible for generating its documents, the IE office provides technical support and feedback designed to help each program achieve compliance. The feedback process through which **Plans** and **Reports** are received by IE and subsequently revised if needed is depicted in Figure 4.

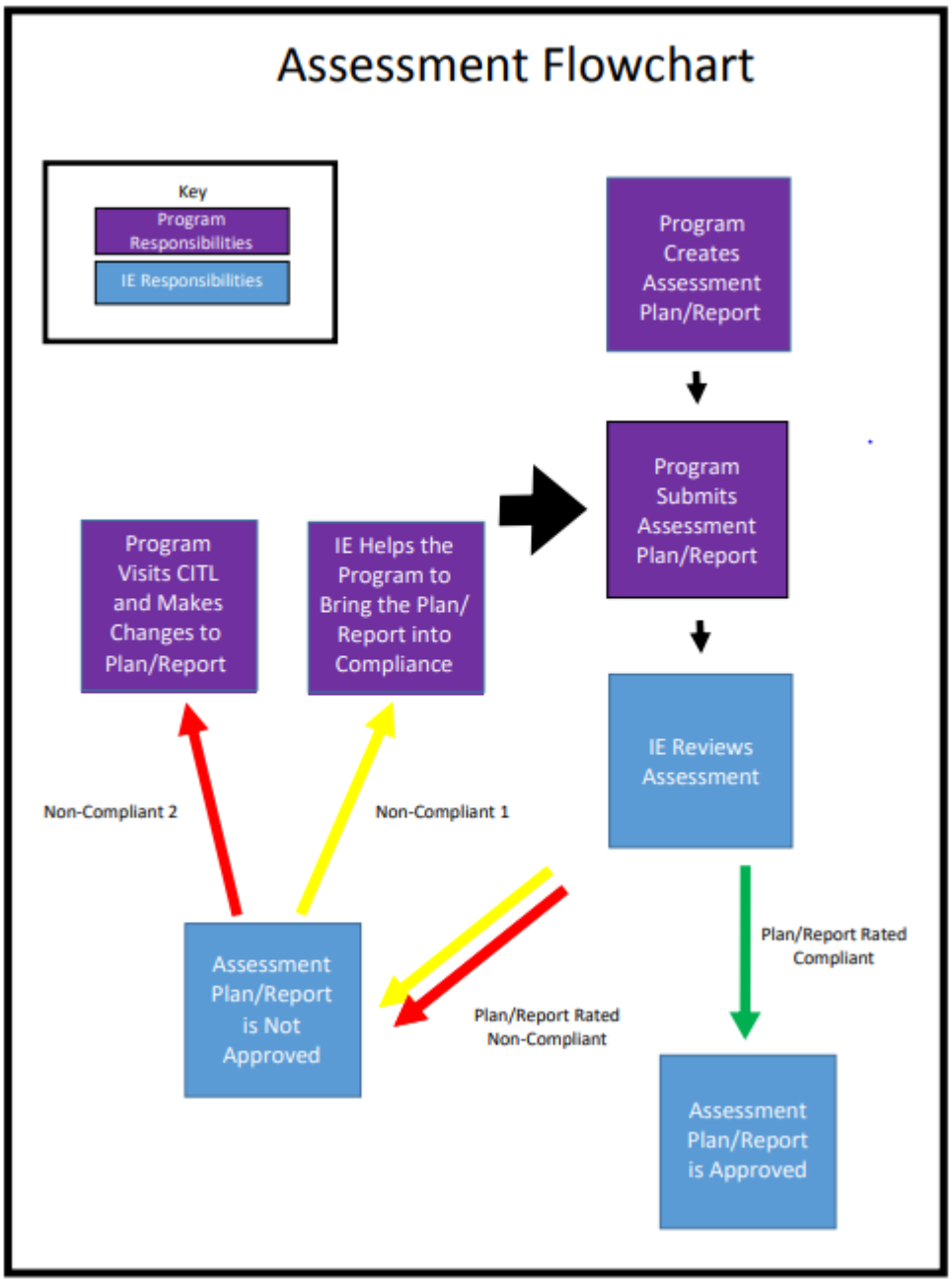


Figure 4. Assessment flowchart indicating responsible parties.

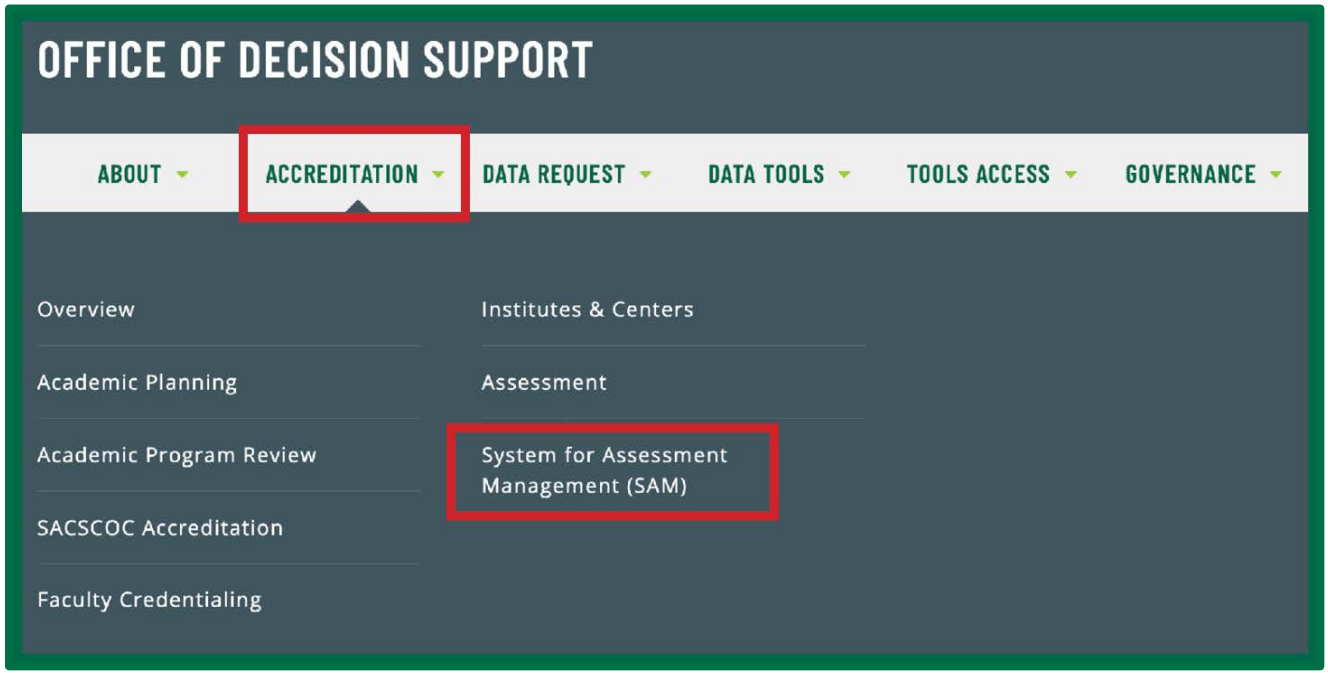
PART 3: SYSTEM FOR ASSESSMENT MANAGEMENT (SAM)

Accessing SAM

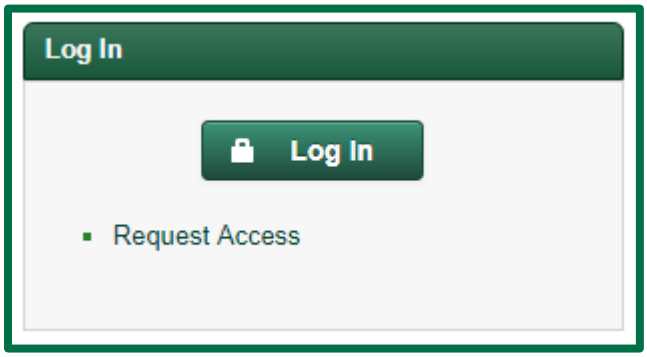
Locating SAM

To access SAM, follow the instructions below.

1. Open your web browser
2. Go to usf.edu/ods
3. Click the "Accreditation" tab at the top of the screen
4. In the drop-down menu, click "System for Assessment Management (SAM)"



5. Click "Log In". You will be prompted to enter your NetID and password.
    - Note: If you never accessed SAM before, you may not have access. To request access to SAM click the "Request Access" link. Please see the following section on how to use the Request Access page.



Requesting Access

On the Request Access page, you will need to input the following information:

- NetID;
- First Name;
- Last Name;
- Email;
- *Assessment Group* (see below);
- Campus (for all current programs, please select "USF");
- College or Division.

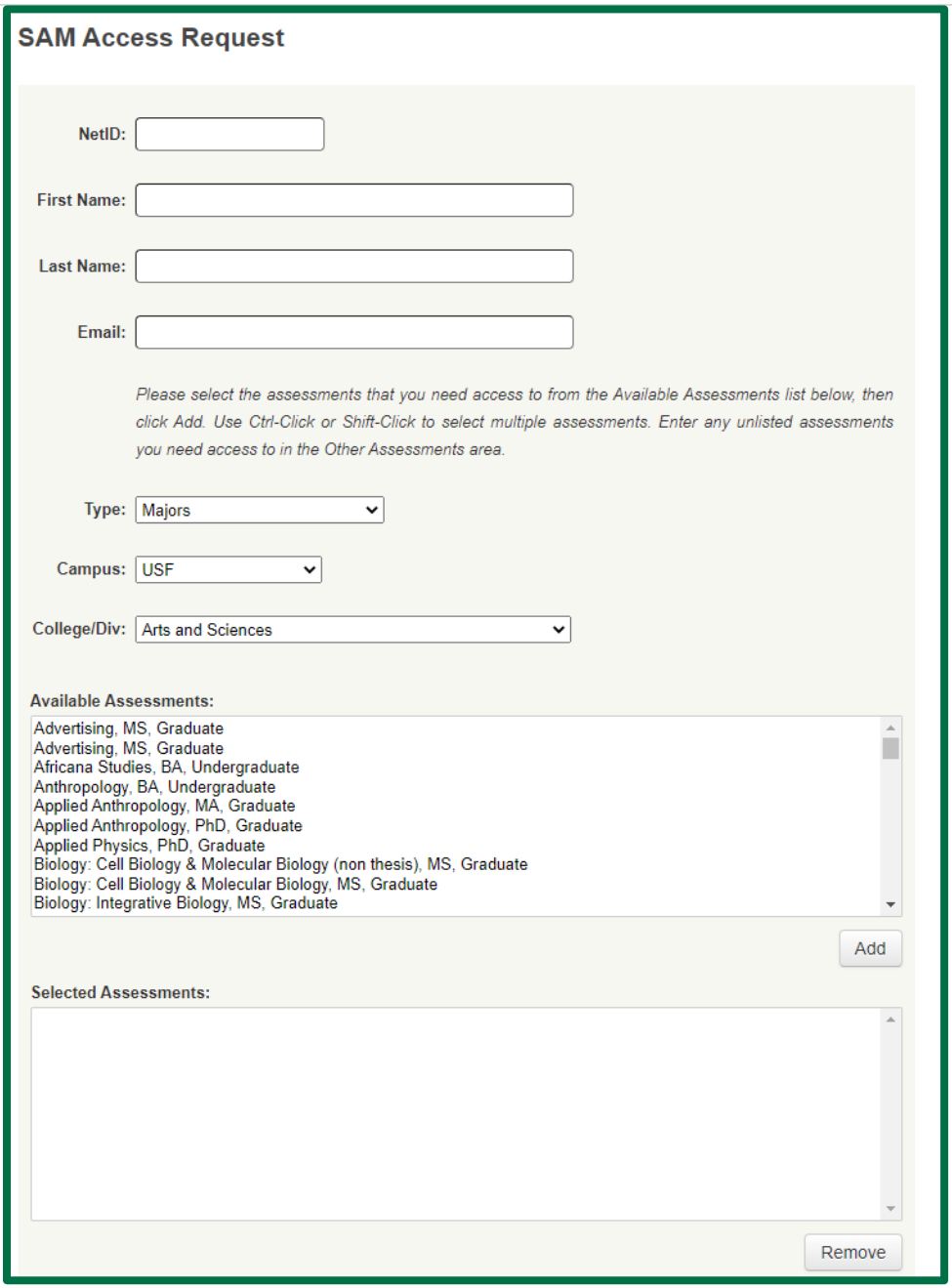
Assessments are organized by assessment type/group. There are five *assessment groups*:

- Majors;
  - All the academic programs (excluding certificates) fall under this category.
- Certificates;
- Student Support Services;
- Institute and Centers;
- Administrative (Archived).

Once all the required information is selected, you will see a list of assessments appear in the section titled "Available Assessments". Please select the assessments to which you need access, then click "Add". Use Ctrl-Click or Shift-Click to select multiple assessments. Enter any unlisted assessments you need access to in the "Other Assessments" area.

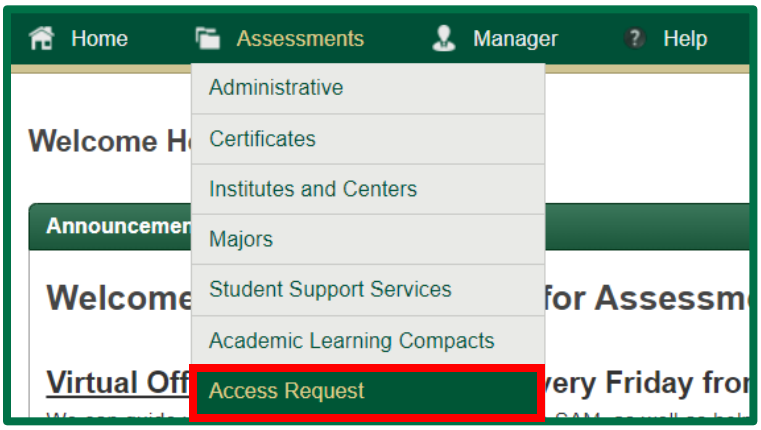
By default, each user is given a "Contributor" role; however, you may request another role, if needed. There are three roles in SAM that a faculty or staff member may request:

- Contributor – This role is given to the faculty or staff member who is responsible for editing and submitting assessments; the person in this role receives updates, emails, and notifications regarding the assessment.
- Supervisor – This role is for someone who supervises the assessment, but is not directly involved with monitoring every single assessment plan/report (i.e., a Dean or a Chair); the person in this role may edit or submit the assessment information, but they will not receive updates, emails, and notifications regarding the assessment.
- Viewer – This role gives permission only to view the assessment, without the ability to edit or submit them; the person in this role does not receive updates, emails, and notifications regarding the assessment.



You will receive an email as soon as you have been granted access to the requested programs.

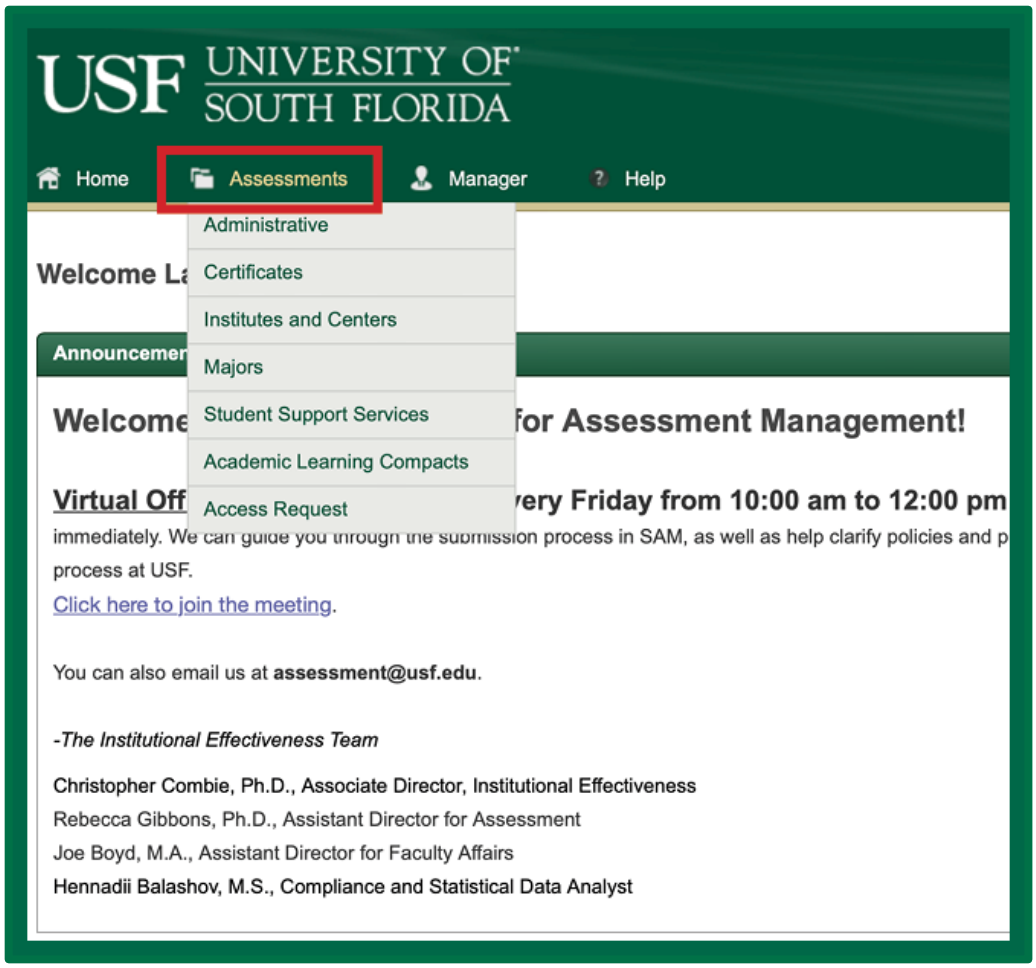
Please note, if you already have access to SAM, and need access to additional programs, you may request access to additional programs directly in SAM. In the "Assessments" drop-down menu, please select "Access Request" as shown on the picture to the right. In the resulting page you will be able to select additional programs to which you need access.



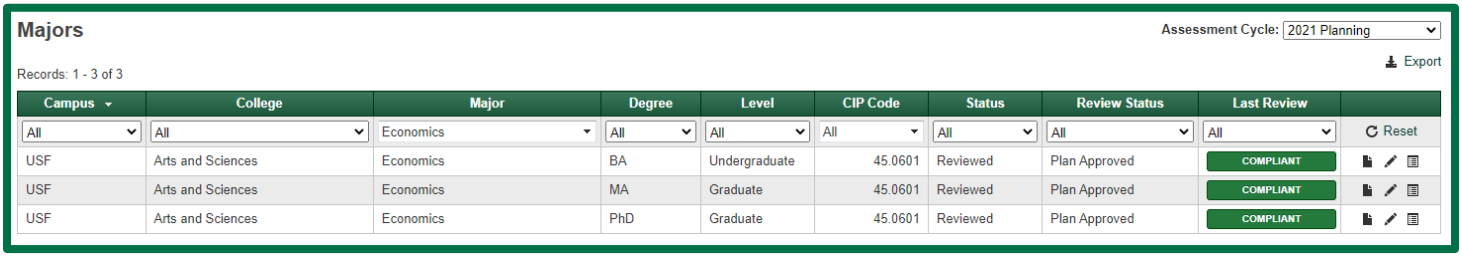
Navigating SAM

Homepage and Assessment List

When you have successfully logged into SAM, you will see the homepage with announcements about important information regarding upcoming due dates, changes to the assessment requirements, and other important information.



To see assessment **Plans** and **Reports** to which you have access, click "Assessments" as shown on the picture above and select assessment type from a drop-down menu (***the figure shows the managerial view; contributors will have access only to those assessment types to which they are assigned***); after you select the appropriate assessment type, you will see a list of assessments as shown below:



Campus	College	Major	Degree	Level	CIP Code	Status	Review Status	Last Review	
All	All	Economics	All	All	All	All	All	All	
USF	Arts and Sciences	Economics	BA	Undergraduate	45.0601	Reviewed	Plan Approved	COMPLIANT	
USF	Arts and Sciences	Economics	MA	Graduate	45.0601	Reviewed	Plan Approved	COMPLIANT	
USF	Arts and Sciences	Economics	PhD	Graduate	45.0601	Reviewed	Plan Approved	COMPLIANT	

The "Academic Learning Compacts" Assessment Type

BOG Regulation 8.016 requires each SUS institution to develop a process that ensures that program faculty:

> Develop and publish an Academic Learning Compact (ALC) for each baccalaureate program. At a minimum, the ALC must contain a list of core student learning outcomes (SLOs) in the areas of content/discipline knowledge and skills, communication skills, and critical thinking skills (and examples of assessment students might encounter).

SAM automatically extracts SLOs, the curriculum map, and common assessment methods and publishes it on the public-facing web page; you can access and see the ALCs from the "Assessments" menu. This is not an editable field.

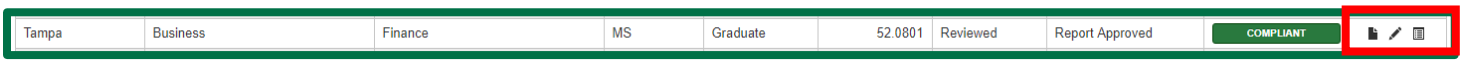
Status Columns

Once the assessments to which you are assigned are visible, various information is contained in the Status columns. The first six columns are populated by IE (Campus, College, Major, Degree, Level, CIP Code); however, please take a look at columns seven through ten (four rightmost columns), which reflect the current status of the assessment.

1. **Status Column** shows the last action conducted on the assessment.
    a. **Not Started** – no assessment has been submitted to the system for the current cycle.
    b. **Edited** – the assessment was edited by the unit, but not yet submitted.
    c. **Submitted** – the assessment has been submitted and awaits IE review.
    d. **Reviewed** – the assessment has been reviewed. You may go in and make adjustments if needed.
    e. **Reopened** – the assessment was viewed by the department, but there have been no edits made.
2. **Review Status Column** shows the status of the review by IE.
    a. **Plan/Report Not Reviewed** – the assessment was not reviewed; either it was not submitted, or we have not yet been able to review it.
    b. **Plan/Report Not Approved** – the assessment is not in compliance with SACSCOC and/or BOG standards, therefore adjustments to the assessments are needed.
    c. **Plan/Report Approved** – the assessment meets minimum SACSCOC and BOG standards.

d. **In Review** – IE is in the process of reviewing the assessment. You cannot make edits if the plan/report is marked "In Review".

3. **The last Review** shows the degree of compliance and granted exceptions.
   a. **Compliant** – the assessment meets minimum SACSCOC and BOG standards.
   b. **Non-Compliant 1** – minor edits are needed to bring the assessment into compliance.
   c. **Non-Compliant 2** – major issues with the assessment (e.g. missing elements).
   d. **On Hold** – the assessment was granted an extension or an exception.
   e. **New Programs** – recently created programs are not required to submit the Report; however, they are required to submit the Plan (see the distinction between Plans and Reports below).
4. **You may perform the following actions with the assessment.**
   a. **View Assessment** (Paper Symbol (1st icon in redlined box below))
   b. **Edit Assessment** (Pencil Symbol (2nd and middle icon in redlined box below))

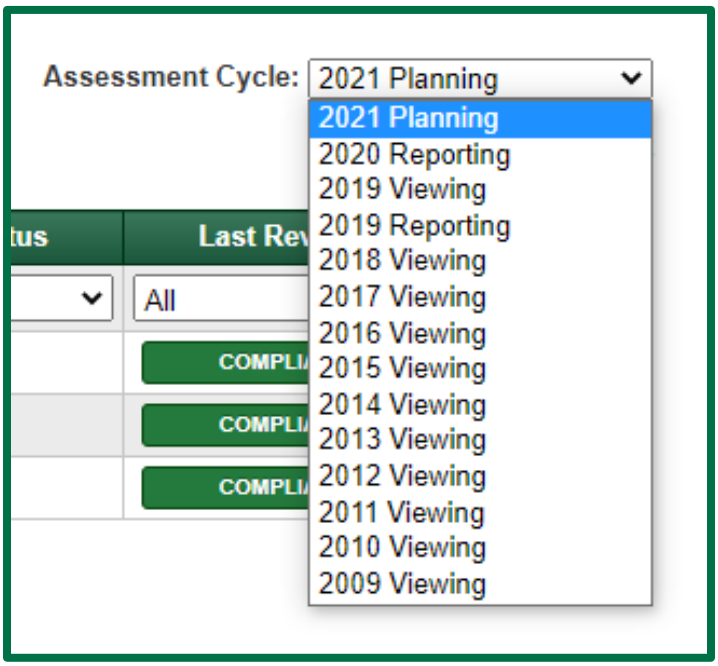


Assessment Cycles

At the top-right corner, you will see the cycle selection. There are two concurrent cycles that you can work within SAM at any given moment:

1. **Plans**
   a. The plan involves preparation for the upcoming year. Required assessment sections are:
   b. Student Learning Outcome Statement
   c. Method of Assessment
   d. Performance Target
2. **Reports**

   The report includes information about the year that has passed. Required assessment sections are:
   a. Assessment Results
   b. Use of Assessment Results

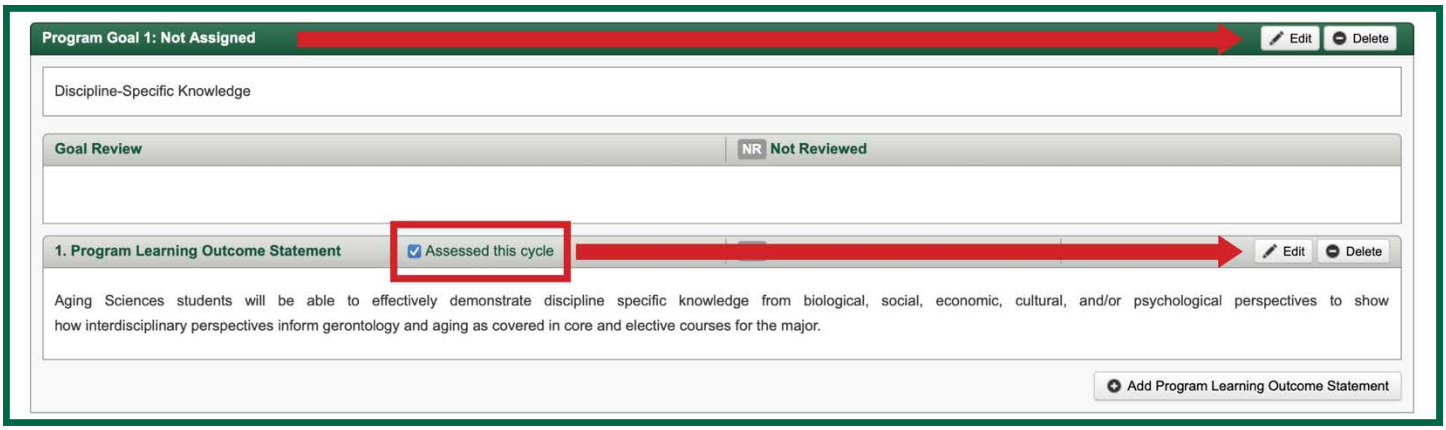


Note: Whenever you are submitting an assessment, ensure you are submitting it in the correct cycle. The overview above details which submissions are required at which times.

Working with the Assessment Plan/Report

Editing Goal/Outcomes

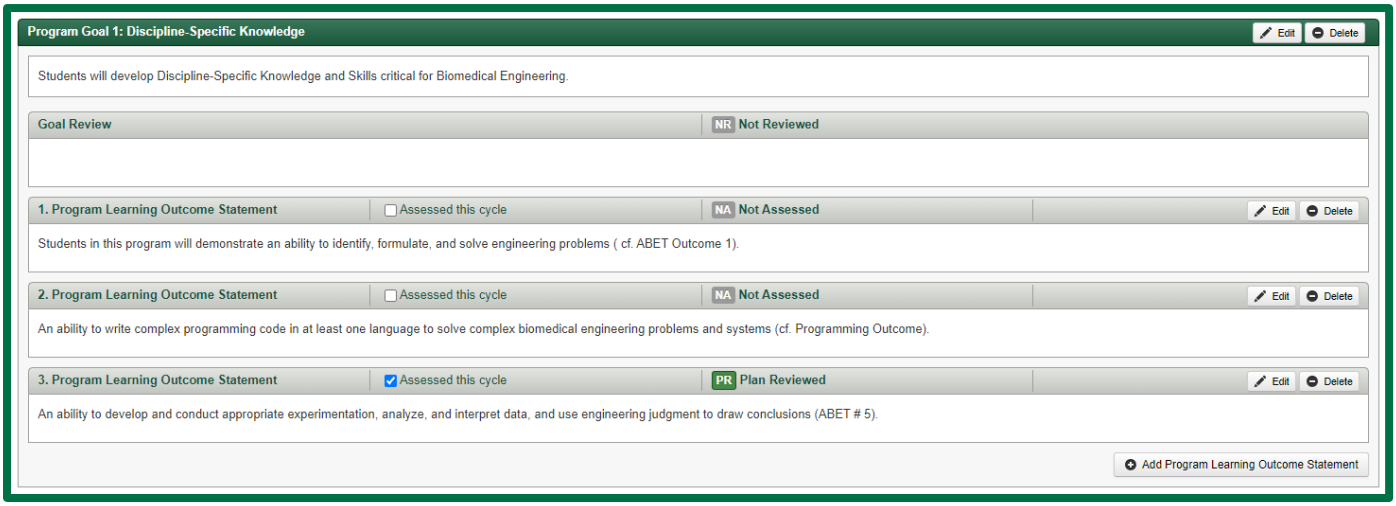
To edit a goal or an outcome, click the edit button that is direct to the right of the object you wish to edit. ***Please note, if "Assessed this cycle" is unchecked, all the sections beside the Student Learning Outcomes Statements will be hidden (e.g. Methods of Assessment, Performance Targets, Assessment Results, and Use of Assessment Results).*** Contributors will not be able to edit these sections nor will IE will able to review them. If you intend to assess an outcome, make sure that "Assessed this cycle" is checked.



The "Assessed this Cycle" checkbox

This feature was introduced in SAM to help academic programs conform to SACSCOC and BOG requirements stating that every program "…identifies, evaluates, and publishes goals and outcomes for student achievement…" The checkbox feature allows the programs to list all of their SLOs, but only assess a few of them per period. The idea is for external evaluators to be able to see all of the SLOs of any given program, and not only those assessed in a given period.

The following program listed three different outcomes under the "Discipline-Specific Knowledge" goal, therefore demonstrating the outcomes students will achieve as a result of the program. However, the program decided to assess only the second outcome this period, therefore they checked "Assessed this cycle" for that outcome.



Goal Type

One of the features is the ability to select “goal type” when creating a new goal or editing an existing one. When you are creating or editing a goal, there is a drop-down menu that allows users to select one of the four “goal types”. These types are:

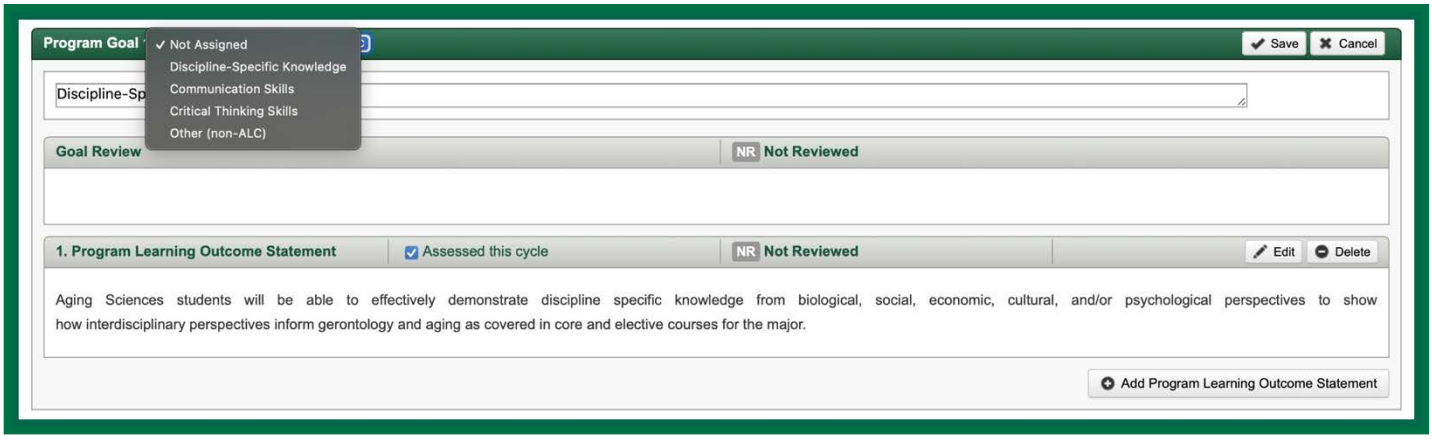
1. Discipline-Specific Knowledge and Skills;
2. Communication Skills;
3. Critical Thinking Skills;
4. Other (Non-ALC).

All undergraduate programs are required to have at least one outcome for the goal types one through three. It is possible to have additional goals that do not fit the ALC framework; in this case select “Other (Non-ALC)” and enter a goal statement. Some examples of possible Non-ALC goal types are laboratory skills, information literacy, ethical reasoning, civic engagement, etc.

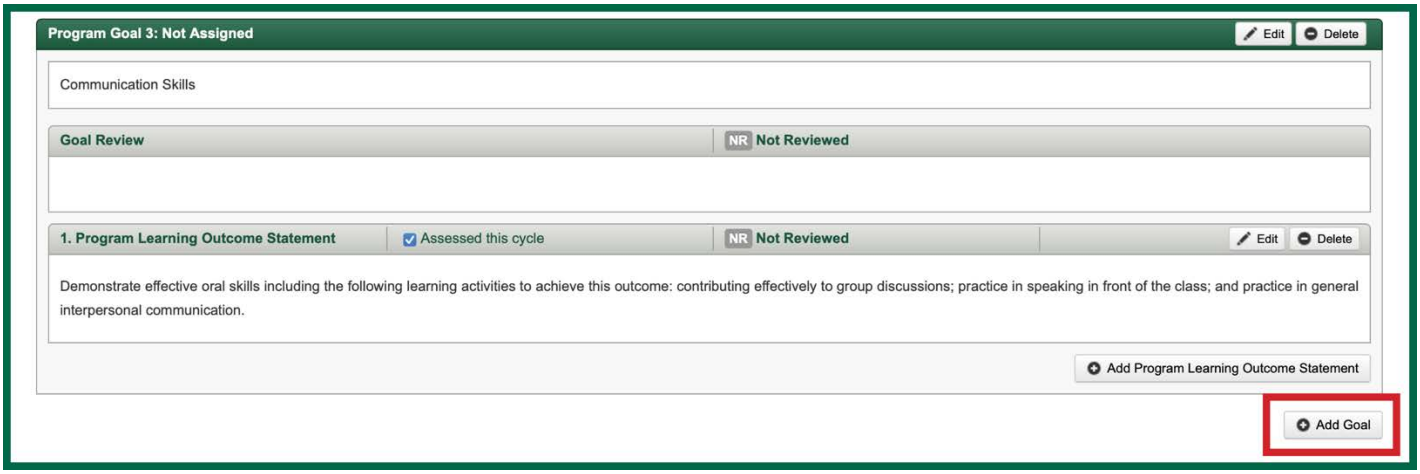
Graduate programs are not required to use any of the three ALC goal types. They may select the “Other (Non-ALC)” goal type and state goal(s) that represent their specific program.

For the **existing goal**, click “Edit” next to the goal statement. If you do not see an “Edit” button, scroll to the bottom of the screen and click “Reopen for Editing”/ “Unsubmit Assessment”.

You will be able to select the goal type from the drop-down menu, and input the goal statement sentence in the field below:



If you are adding a **new goal**, click "Add Goal" (see the redlined box in the lower right of the box below) and you will be able to select a new goal type and input a new goal statement. Please refrain from using partial phrases, and instead, use full sentences to state program goals ***(i.e. "Students will demonstrate proficiency with written and oral communication skills."*** instead of ***"communication skills").***



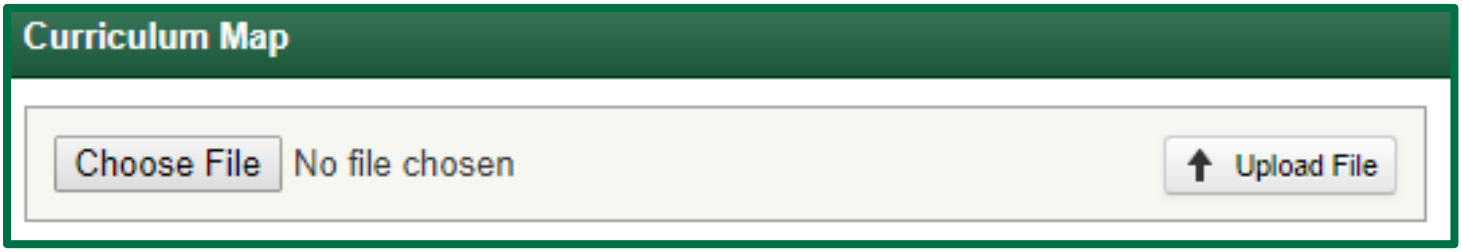
Please note that in this case the "Communication Skills" goal type no longer appears on the list. Each assessment plan may have only one of each ALC goal type; however, you may have any number of "Other (non-ALC)" goal types.

The example below is a good way to organize outcomes:

- ➔ Goal Type: "Communication Skills."
  - ⇨ Goal Statement: "Students obtaining an undergraduate degree in Mechanical Engineering will be able to communicate effectively and on the level that is necessary for a successful employment within the discipline".
    - > Outcome 1: "Students will demonstrate written communication skills by writing a thesis that presents defensible conclusions, is based on verifiable evidence, demonstrates students' ability to convey essential discipline-specific knowledge, and employs rules of Standard Written English".
    - > Outcome 2: "Students will demonstrate oral communication skills by giving a presentation using various verbal and non-verbal techniques of effective delivery".
    - > Outcome 3: "Students will be able to communicate effectively as a team, including the ability to plan and organize workflow, manage conflicts, and efficiently share information."

Uploading a Curriculum Map

The section to upload a curriculum map is at the top of the assessment plan page (*see screenshot below*). To upload your curriculum map, click on the edit button at the top right of the curriculum box. Two more buttons will appear.

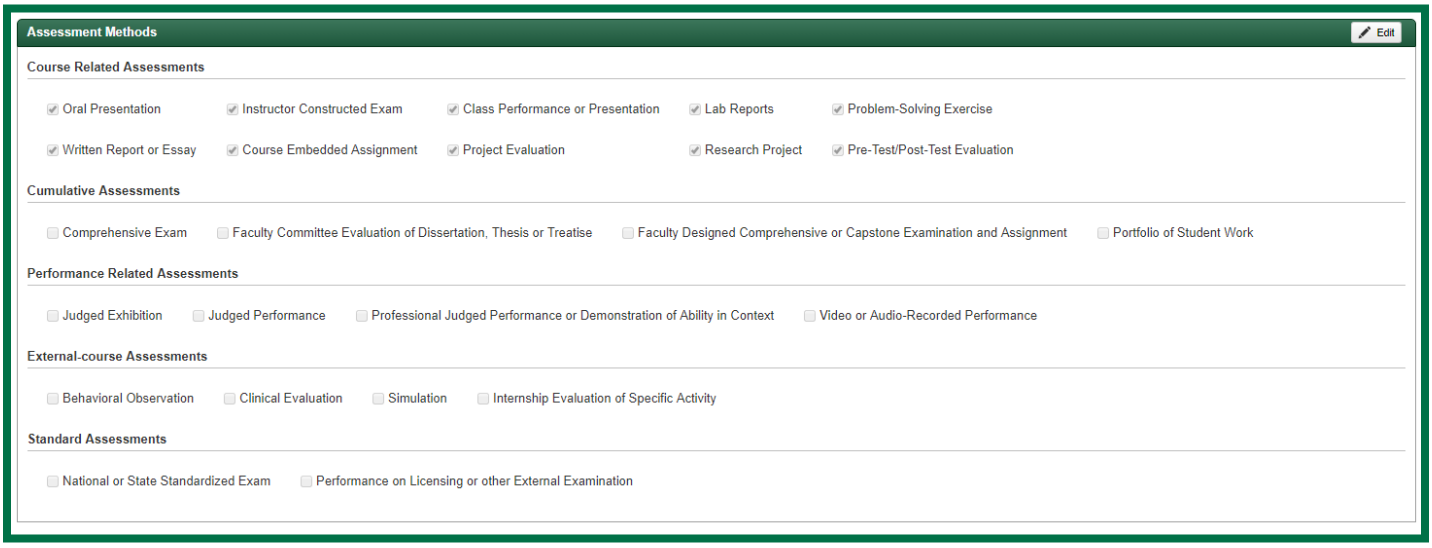


- Chose File: select a file ending in .bmp, .gif, .png, .jpeg, .doc, .xls, .xlsx, .pdf
- Upload File: Upload selected file to SAM. Once uploaded, the document will become a link that when clicked will download the uploaded file.

Important Note: Please make sure that Student Learning Outcomes (SLOs) listed in the map and those stated in the assessment plan are <u>perfectly aligned</u>; in other words, (1) there should be an equal number of SLOs, (2) the wording of SLOs should be identical both in the curriculum map and in the assessment plan.

Selecting Common Assessment Methods

In addition to uploading a curriculum map, all undergraduate degree programs are required to select all of the assessment methods that students may encounter in the program. Common assessment methods can be selected at the bottom of the assessment page, above the "Review Submissions" button. It is important to note that completing this section does ***not*** constitute a compliant Method of Assessment section for any individual PLO.



Submitting Assessment

To submit an assessment for review by IE, please scroll to the bottom of the assessment page and click "Review Submission". Clicking it will take you to a separate checklist page where all the sections are grouped by section type. On this page, the contributor will need to certify that her/his/their assessment plan/report adheres to the compliance standards. If you are satisfied with your assessment and you attest that the criteria have been met, you may check "Learning outcomes are ready for review" and click "Submit".

Note: Whenever you make changes to the individual sections within the assessment plan/report, assessment remains in the "Edited" status. For IE to review the assessment, you need to finalize your changes by submitting the report.

PART 4: APPENDIX OF ASSESSMENT RESOURCES

Improving Learning: Assessment Drafting & Planning Worksheet

Use this document as a tool to devise a draft for the Assessment **Plan** in Year One of the 3-year assessment cycle. This document is designed to serve as a guide with questions to answer collaboratively to generate the components of the assessment. The best assessments stem from a process of inquiry, like how research evolves in established disciplines. This template is designed to facilitate inquiry for improvement.

After completing the worksheet, you will have provided all of the information needed for the Assessment **Plan** (Program Goals, Program Learning Outcome (PLO) Statements, Methods of Assessment, and Performance Target(s)). The plan will carry over into Year Two and Year Three, where you have the option to edit if desired.

1. Here is a list of guiding questions to devise the components of an assessment plan:
    a. **What are the most important things we want our students to know and/or be able to do when they graduate?**
        i. What do we want to know about our students' learning, and why?
            1. Are there external standards for competency that our students should master?
            2. What are the things we would be embarrassed to learn graduates of the program cannot do?
            3. What do our potential employers want to see in our students (if applicable)?
            4. What went well with the program's assessment in the past? What went poorly (if applicable)?
            5. What program improvements have we been considering, but are not quite sure how to implement?

Typically, the topics identified in answering question 1 are at the level of Program Goals, and if not, can be adapted as such. Program Goals are the important things that we want students to know and be able to do upon graduation. The Goals do not have to be directly measurable student knowledge or skill, but broadly define the skills you expect a graduate to have mastered throughout the program.

2. If all students are successful in the Program Goals, what would that mean for the program? If none of the students are successful, what would that mean for the program?
3. Can data about this Program Goal support other data we already collect? Is this Goal aligned with making decisions such as:
    a. Development of new courses/modules?
    b. Revising rubrics or tests?
    c. Revising curriculum?
    d. Faculty development support?
    e. Resource allocation?

It is recommended to draft some action items such as those in the list in question 3 that might be implemented if the data demonstrate that students are either very successful or not very successful. Because we are interested in assessing the program as a whole and over a longer time than any individual cohort, it is important to overcome the desire to implement decisions such as sending students to tutoring labs or writing centers, hiring consultants to change student behavior, or "continuing to monitor" results without thoughtful reflection and actionable next steps. Seek to integrate these with larger programmatic improvements that will reduce the need for such activities.

4. Is the Program Goal we are interested in aligned with an Enhanced General Education outcome? If so, how is that outcome assessed?
5. Are these Program Goals dictated by an external stakeholder such as a programmatic accreditor or employer best practice guide? If so, how are these assessed?
6. How can the knowledge or skill encapsulated in the Program Goal be demonstrated?
    a. What can we observe that would indicate success on the Goal?
    b. Can the Goal be broken down into measurable components? If not, consider the breadth of the Goal and determine if it can be broadened, or if its specific focus is sufficient.

The answers to questions 4-6 dictate the Program Learning Outcomes (PLOs), which commonly represent the specific, observable contexts in which students demonstrate the knowledge or skills included in the Goal. When writing the PLOs, this resource from our colleagues at the University of Central Florida might help https://cdl.ucf.edu/teach/resources/objective-builder-tool/.

7. In which courses or times in the program (e.g., candidacy) do students demonstrate that they have achieved this outcome?
8. How would an observer know that the student has achieved the outcome? Describe the tool/instrument that you can use to determine if students achieved this outcome; this is referred to as the Method of Assessment for the PLO. Some potential tools are:
    a. Culminating/Capstone assignment
    b. Knowledge examinations with questions reflecting the specific outcome
    c. In-Class Survey
    d. Performance Review/Jury
    e. Portfolio/ePortfolio
    f. Pre-test/Post-test
    g. Essays, papers, essay questions from exams.
        i. If we are using a subjective rating, like scores on a paper, what are the criteria and performance expectations of the scoring rubric?
        ii. Does more than one person review each student and compare their scores for accuracy?
    h. Standardized test (i.e., American Chemical Society Examination)
    i. Comprehensive and thesis exams, oral and/or written
9. How is this assessment tool administered or collected; is this embedded in a course or is it administered outside of classes?
    a. Who has access to the data and can the information be reported?
    b. Is it feasible to collect data from all students or is a sample appropriate?
10. What is the acceptable proportion of students achieving a particular score to indicate that the program is doing well on this PLO?
    a. What Performance Target would you set to identify whether students are learning at a certain level (such as 70% of students score 3/5 on a rubric or 80% of students achieve a score of 90% on the exam)?

Your Year One Assessment **Plan** is ready to be uploaded into SAM.

Improving Learning: Assessment Reporting Worksheet

Use this document as a tool to devise a draft for the Assessment **Report** in Year One of the 3-year assessment cycle. After completing the worksheet, you will have provided all of the information needed for the Assessment **Report** (Assessment Results and Use of Assessment Results). The **Report** is completed each year, with specific action items required in (e) in Year Two.

Some guiding questions to guide the report-writing process:

1. Were we able to collect the data we had intended to? Why or why not? Describe in detail the experience in (b) Method of Assessment if it differs from the **Plan**.
2. List raw and processed data; if there is an unreasonable volume of data, try to select only those data which directly relate to the learning outcome of interest.
3. Starting with one data point, ask yourselves:
    a. Is this what we expected?
    b. How does the data align with our experiences in the classroom? Does it corroborate/substantiate witnessed events while interacting with students?
4. Looking at the larger set, ask yourselves:
    a. Are there any patterns?
    b. Does any single data point emerge as unique or leap out?
    c. Are there any anomalies, such as unexpected, unintended, or provocative data? If so, list any external factors that might have impacted performance outside of knowledge/skill (e.g., hurricanes, illnesses).
    d. Do these data suggest any connections to external entities, programs, or ideas, or trends in the discipline?

After processing data…

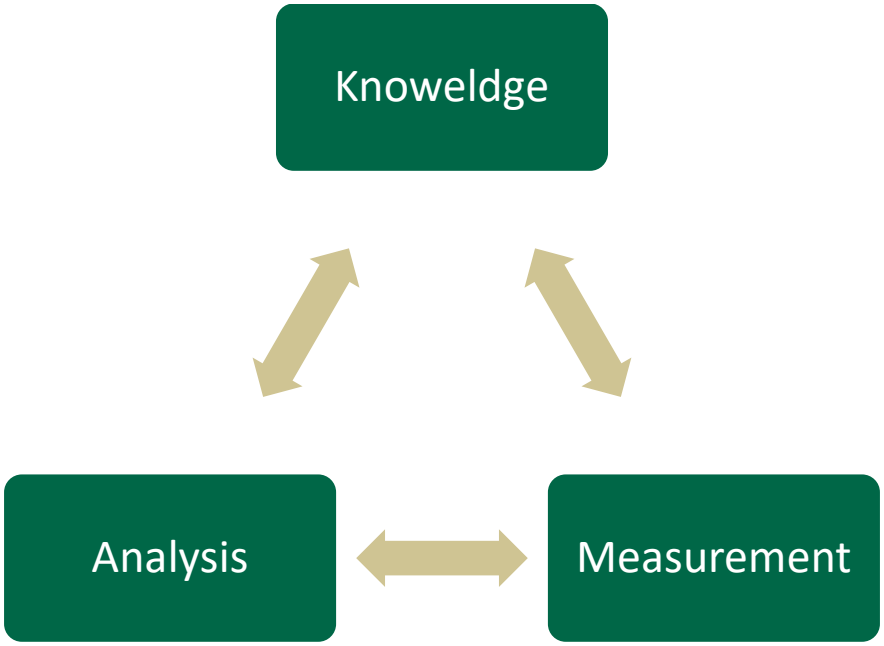
5. What are your initial conclusions? Do you have any other data to substantiate these conclusions?
    a. Don't forget, the analysis should be framed around what students have learned, not their pre-existing knowledge/effort.
6. What new questions do these data bring you to ask? What do the data *not* say? Document these as potential future assessment planning in (e) Use of Assessment Results.
7. How might your data lead you to improve practices? This process is designed to help improve practice through the adjustment of assessments, pedagogies, strategies, etc. This is important to consider even if students do well and demonstrate mastery.
    a. What can the program do differently to ensure that students are achieving the outcome?
    b. What resources are available to facilitate the processes and activities? What resources are needed to accomplish this?

Methods Supplements

Methods Supplement: Quick Guide to common methods

1. All methods:
    a. Must include a statement on how the assessment specifically measures the task, information, or competency states in the Learning Outcome – it *is not required* to include all prompts, individual items, or rubrics, but there must be a statement indicating alignment.
    b. Must include a clear statement of the assessment type, including the assessment context: the course in which the assessment will be conducted, the circumstances of a non-course assessment (like a dissertation defense or comprehensive exam), the number of questions, the origin of the instrument (textbook, written in-house).
    c. Must include an indication of sampling: A sample can be used for any assessment type. Indication of which students provided data: all, a partial unit, or a sample is required for all methods. If using a sample, there must also be a statement on how the sample was obtained.
2. Essays, written student work including discussion board responses, theses/dissertations, presentations, oral reports/exams, performances, portfolios, open-ended embedded test questions, lab reports, internship or practicum evaluation forms:
    a. Must include a statement on how the rubric/scoring scale was developed and a statement on what measures were taken to reinforce its validity/reliability.
    b. Must include the number of levels of performance and a brief description of the criteria of the rubric.
    c. Must include a statement on the number of reviewers (must be more than 1) and their expertise as well as the method for Inter-Rater Reliability/Agreement determination.
3. Exams/tests, objective embedded questions, standardized tests:
    a. Must include a statement regarding evidence for the validity and reliability of its data, available from test developers or exam manual if using a standardized measure. If not using a standardized measure, this information must be explained based on who was involved in generating the instrument and any evidence collected before administration.
    b. No information on raters or rubrics is required.

Method Supplement: Alignment



The term "alignment" emerges in assessment conversations, quality assurance conversations, and at the car repair shop. In the case of completing an assessment **Plan** and/or **Report**, we are guided to require alignment, as indicated in the Assessment Standards, from guidelines of our institutional accreditor, SACSCOC. In this context, alignment refers to the extent to which all components of an assessment strategy are related and connected. Our understanding of knowledge in our disciplines, the strategies we use to measure knowledge, and the analyses we complete to determine if knowledge has been acquired should be connected in a reciprocal relationship, depicted in the figure.[6] Alignment is further enhanced by adding instructional activities to the relationships detailed in the future, although this context is not reported in assessment activities. The goal of alignment is to ensure that the decisions made based on assessment activities are supported by the strongest possible evidence.

[6] National Research Council. (2001). Knowing what students know: The science and design of educational assessment. The National Academies Press. https://doi.org/10.17226/10019.

Methods Supplement: Certificates

It is particularly challenging to assess certificate programs. It is important to remember that we are seeking to assess a program as a unit, not seeking to assess individual students. This challenge is exacerbated when certificates have low enrollment, so assessments seem to only be applied to small groups of students and fall into assessing individuals. In the case of completing assessments, with fewer than 5 students completing the certificate, it would be difficult to report data while respecting student privacy. In this case, the program should reflect on recruitment and assessment strategies that can increase the size of the population. As such, the following places to start might be helpful:

1. Start with the simple answer: In some programs, it is possible to identify the core courses of the certificate and assess those courses through all students enrolled as a proxy for the Certificate. Because we want to learn about the success of the certificate to achieve the outcomes it intends, it should not matter if students are formally "enrolled" in the certificate or not.
2. Start with the end in mind: What is the main objective of the certificate? Is it for students to obtain a job-related skill? If so, incorporating a portfolio for certificate earners to submit can help you assess the certificate while also helping the students promote their skills to employers. An *e*Portfolio-type model, wherein students complete a reflection on a collection of artifacts from their various courses, can be an ideal technique (learn more here). Faculty can generate a rubric that details the level of expectation for the artifacts and reflections and score these portfolios to generate meaningful assessment data.
3. Start with practical experiences. Sometimes, in program-level assessment, we collect assignments and explore those separate from any individual course. This can be done on the certificate level as well; when students engage in activities such as internships, research, or other high-impact practice, this is a key environment for assessment that can be embedded rather than external to the course of the educational process. This is a technique wherein certificate students can be uniquely identified.
4. Start with the big picture: If the certificate can be completed through a subset of courses that are part of a larger degree program, there is likely some degree of overlap between the desired learning outcomes of the degree program and the certificate program. It is also likely that the certificate is awarded at an (if only slightly) lower level than the degree program, and as such, the learning outcomes will be similar but ask less of students. For example, for a Master's degree in Public Health, a student is expected to "Formulate a coherent framework for the integration of public health theory and concepts with real-world experiences or settings outside of the classroom." However, to earn a certificate in a subdiscipline of public health, they are only expected to apply the theory and concepts in the subdiscipline. In this way, the learning outcomes are aligned to the overall degree program, but the certificate can be independently assessed at its appropriate level. By determining alignment between the learning outcomes of both programs, those learning outcomes specifically attributed to the certificate can be assessed appropriately in a way that complements the degree program's assessment. When designed well, the subset-certificate assessment will support the degree program assessment to provide a full picture of student learning.

Methods Supplement: To test, or not to test

The key to useful program-level assessment is to consider what will happen with the data that will be collected. Ideally, the data should be used (in collaboration with other information) to make decisions on how to improve the program. Therefore, the assessment process must provide the best data possible- regarding both accuracy and applicability. In this context, the methods used for assessment can serve as a venue for creatively exploring student knowledge and skills, rather than doing so in a standardized way.

For example, if an ideal graduate is expected to conduct text analyses, then the assessment data should reflect their ability to do so; in this case, a multiple-choice test might not be the best-aligned method. Similarly, a quiz administered in one course might not be comprehensive enough to reflect the program's achievement of its goals. However, for a program outcome that requests that students can recall a variety of facts or select from a series of unambiguous next steps for a scenario, multiple-choice tests might be the best solution.

When considering moving away from multiple-choice tests to novel and relevant data collection ideas, consider the following places to start:

1. Start with the items: If the program is currently using a multiple-choice measure to assess achievement of learning outcomes, can "test-savviness" allow a student to answer correctly without actually knowing the content? For example, items with double-negative statements (i.e., "Which of the following was NOT a primary cause of the Canon Wars?") can often be interpreted without subject matter expertise, only the ability to parse out possible correct responses. If the items can provide information that is clouded by knowledge of tricky techniques instead of knowledge of the course content, this might be a poor measure. Generating test items that avoid these pitfalls is an art and a science; many resources can provide guidance (example link).
2. Start with the Program Learning Outcome (PLO): What is the action verb in the PLO? What would someone who successfully achieves the PLO look like or be able to do in the (most expected) workplace, future education, or outside life? A well-written PLO states its best assessment strategy- even if it might take longer to assess than the use of a multiple-choice exam. Resources on learning taxonomies can provide additional insight into this activity.
3. Start with what is already being done: Look at current activities, assignments, and techniques used broadly across courses, such as class discussions, that might not be documented formally. By recording these types of activities through rubrics or by facilitating on Canvas, they can be used for program-level assessment without the burden of creating new assessments and collecting extraneous data.
4. Start with where the students are going: Can the program simulate a workplace (or graduate school) environment for students? Determining the level of performance in their likely future environment can help students reflect on their abilities while providing an assessment measure that can span the program. A simulated case environment can be scored by multiple raters, such as a faculty member and a member of an employer advisory board or other practicing professional, on a scale that details the expectations of performance and is recorded for assessment.

Methods Supplement: Rubrics

Rubrics are tools often used to rate or score the quality of student work (papers, presentations, etc.). Rubrics are often also used as a tool to communicate expectations to students. While the uses of rubrics vary in context, rubrics have many advantages and disadvantages in day-to-day assessment work. At the program level, rubrics are best used to provide additional accuracy and precision to the results of assessments. For example, this is an excerpt from the American Association of Colleges & Universities (AAC&U) rubric for Problem Solving:

	Capstone 4	**Milestones** 3	 2	**Benchmark** 1
Define Problem	Demonstrates the ability to construct a clear and insightful problem statement with evidence of all relevant contextual factors.	Demonstrates the ability to construct a problem statement with evidence of most relevant contextual factors, and problem statement is adequately detailed.	Begins to demonstrate the ability to construct a problem statement with evidence of most relevant contextual factors, but problem statement is superficial.	Demonstrates a limited ability in identifying a problem statement or related contextual factors.
Identify Strategies	Identifies multiple approaches for solving the problem that apply within a specific context.	Identifies multiple approaches for solving the problem, only some of which apply within a specific context.	Identifies only a single approach for solving the problem that does apply within a specific context.	Identifies one or more approaches for solving the problem that do not apply within a specific context.

The Criteria of the rubric are the specific components of the work that is of interest to the scoring. It is important to note that these criteria should be only those that are relevant; it is tempting to include criteria that are easy to score, such as the inclusion of a hypothesis statement that follows a specific template (e.g., “If/Then”). However, the criteria represent the subjective areas of success that are of the highest importance. In this case, the criteria are “Define Problem,” and “Identify Strategies,” These are aligned with the definition of Problem Solving used in the rubric: “Problem-solving is the process of designing, evaluating, and implementing a strategy to answer an open-ended question or achieve a desired goal.” Because these criteria are all important in the designing phase as in the definition, they are appropriate as criteria (the full rubric has additional criteria).

The Levels of Performance of the rubric are the designations between components of success. These are often defined using numbers, but this is not a requirement. What is more important is a descriptive differential between the performance of students. In the AAC&U rubric, the highest level of performance is “Capstone,” the middle two are “Milestone,” and the lowest is “Benchmark.” Notably, if a student's work does not meet the Benchmark level, a score of “0” can be applied; and, if an assignment did not ask for a certain criterion, a score of “N/A” can be applied to avoid inappropriately punishing students. It is best recommended that the levels of performance are labeled with positive terminology, such as “developing,” over terms like “inadequate,” which present as a deficit framework.

The descriptors in the cubes turn the document from a checklist or rating scale and make it a rubric. This is a key differentiation that lends itself to providing information regarding accuracy and precision because it limits the subjective interpretation of the student work from a 1-4 scale to details of what is expected at each level.

Methods Supplement: Validity & Reliability

"Validity" and "reliability" are terms often used in the educational environment to refer to the colloquial and scientific interpretations of the terms "accuracy" and "precision." Validity, similar to accuracy, is a term used to describe the extent to which a tool/instrument provides information that is interpreted correctly.[7] Reliability is similar to precision and refers to the extent to which an instrument/tool will provide similar information in multiple data collection events and across all items.[8]

In the case of both validity and reliability, no matter what the assessment instrument, there is no "one size fits all" approach and there are no permanent designations. Both are on continuums that allow for different degrees of validity and reliability for each assessment tool in each assessment context. At USF, we are asked to provide brief descriptions of the evidence for validity and reliability for our assessments. This is because if assessment is to be used as a part of program-level decision-making, as it should, it should provide the highest quality information possible. Ideas for addressing both of these points are included here.

A perfectly valid instrument measures exactly what it intends to, and provides information appropriate to make decisions. In reality, every instrument has some variations in validity; the confidence interval of a public opinion poll is always reported in the same way as a kitchen scale allows for a range in which it is accurate. In assessment, the instruments we use are multiple-choice questions, rubrics, and the like. The validity of these instruments will fluctuate in context, and while it is impossible to calculate some range of accuracy, some steps can be taken to increase the extent to which an instrument is valid.[9]

With these characteristics in mind, determining a level of validity can be done in several ways. Some authors define different "flavors" of validity such as consequential validity, construct validity, and face validity.[10] While a holistic instrument development designed to make decisions such as medical diagnoses should provide rigorous evidence to support each of these flavors, the purpose of program-level assessment is continuous improvement and does not require this level of rigor. Some tools for establishing an argument in support of validity are:

- No matter the tool, engaging more than one individual with subject matter expertise is a key strategy in the achievement of validity. If an expert generates an assessment, it is well on its way to providing high-quality information. However, there is always the possibility of idiosyncratic interpretation of the subject matter by one expert, and review and revision from external experts can serve as additional evidence. This can be accomplished through engaging with the curriculum committee or undergraduate committee in the department, a group of colleagues from a professional organization, and/or the other faculty teaching the course.
- In a multi-item assessment, such as a quiz or exam, grouping a sub-score on items that refer to a specific learning outcome can provide additional validity. For example, if the students who perform well on a full general chemistry final exam perform poorly on the section regarding balancing equations, there might be a validity concern to explore, and addressing this concern supports the overall validity of the exam.
- Studying the extent to which scores on the assessment are related to success in the long term can lend additional validity. For example, the predictive power of standardized exams is continuously

[7] American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. (2014). *Standards for educational and psychological testing*. AERA.
[8] Ibid.
[9] Airasian, P.W. (1994). *Classroom Assessment* (2nd ed.). McGraw-Hill, Inc.
[10] Messick, S. (1988). Validity. In Linn, R.L. (Ed.), *Educational Measurement* (3rd ed.). Macmillan.

evaluated by exam developers, for whom the correctness of long-term success is an economic need.

- Evidence for reliability is also important for validity; reliability is discussed below.

A perfectly reliable instrument will produce the same measurement for the same student at the same level of mastery across administrations. In reality, every instrument has some lack of reliability; two subject matter experts can rate the same presentation on the opposite ends of a rubric in the same way that the same onion can present slightly different values on the same kitchen scale if placed twice. Reliability is easier to quantify than validity, but it can only be adequately determined when the data has already been collected. So, there should be evidence supporting reliability provided with the results. With the description of reliability in mind, there are distinct methods for establishing reliability for different kinds of instruments.

A non-exhaustive list of methods for determining reliability is provided here:

1. Single-scale measures, like a quiz, test, or survey:
    - Alpha. The commonly reported coefficient alpha measures the extent to which variance in the data is likely accounted for by the "true" differences between student responses, and is relatively easy to calculate. It is best applied in single-outcome scales in which all items are expected to equally contribute to the true score (learn more here).
    - Omega. A less popular, but potentially more effective coefficient, omega, measures the extent to which variance is accounted for by true variance, like alpha. However, omega accounts for situations when some items might have higher relationships to the true value than others (learn more here and here).
    - Coefficient H. A final example of a similar coefficient, H does a similar measurement to alpha and omega, but should only be used when the score of items will be weighted. For example, when some test questions are given more weight because they are more difficult, H would be more effective than alpha or omega (learn more here).
2. Pre-test/post-test:
    - Test-retest reliability can be used in this case. Test-retest reliability seeks to understand the extent to which a scale, like a survey of students' experiences, provides the same measurement at multiple times; assuming the "true" value is also the same (learn more here).
        i. As a note, test-retest reliability is typically only assigned to those measurements wherein there is no anticipated difference in values; so, this would mean that the students did not gain new information over time. It would be appropriate to compare single-scale measures of reliability at both times.
3. Using a rubric with multiple raters:
    - Host a norming session. One way to establish the consistency of scores when multiple raters are required, as is the case with any rubric assessment here at USF, is to complete a norming session wherein sample artifacts are scored by the team and discrepancies are discussed to determine alignment for future scoring.
    - Inter-rater agreement. Inter-rater agreement is the simplest method for determining consistency between raters and can be calculated simply by averaging the scores across multiple raters. See the Assessment Standards for an example.
    - Cohen's kappa is a more advanced calculation that allows for determining the improvement from chance agreement in the data. When looking at a large number of artifacts, this more advanced calculation is helpful to provide further evidence for the confidence that the program can have in the assessment results (learn more here).

Curriculum Map Supplement

All programs are asked to provide a curriculum map as part of the submission of the **Plan** for Year One of the three-year assessment cycle. This is a crucial component of program planning in majors and certificates, wherein the program faculty and staff discuss how their program learning outcomes (PLOs) are distributed across the courses. A common format for a curriculum map is in a table. The table includes the courses that are required or elective or the degree and identifies those in which PLOs are introduced to students, where they are reinforced, and where they are mastered by the students. Ultimately, the map showcases the progression of learning throughout the program and can pinpoint the appropriate courses in which to conduct assessment. These ideal courses have a sufficient enrollment of students participating in the program to demonstrate whether mastery of the material has been achieved. In this process, it is sometimes discovered that no courses will enroll a sufficient number of program students; in this instance, a portfolio of student work or another method of gathering capstone data must be generated by the program.

To demonstrate the process of building a curriculum map, we will follow an undergraduate economics program designing its map. The program has three PLOs:

1. PLO1: Students will be able to align common economic theories with their tenets and assumptions.
2. PLO 2: Students will coherently argue, using proper economic terminology and supporting evidence, for or against a proposed solution to a policy problem.
3. PLO3: Students will use data analysis and economic reasoning to support the optimal solution to a business or public policy problem and explain why other potential solutions are sub-optimal based on the risks, trade-offs, and benefits of the solutions.

The faculty is concerned with those courses that are unique to the major, so they include these courses on the map. This is the curriculum map structure:

COURSES AND EXPERIENCES						**COURSE ATTRIBUTES**	
Prefix	**Number**	**Title**	**PLO 1**	**PLO 2**	**PLO 3**	**Year**	**Requirement**
ECO	#	Economics Introductory Course				1	All Majors
ECO	#	Economics Mid-Level Elective Course 1 (concentration-related)				2	Some Majors
ECO	#	Economics Med-Level Elective Course 2				3	Elective
ECO	#	Economics Mid-Level Required Course				3	Elective
ECO	#	Economics Upper-Division Required Course 1				4	All Majors
ECO	#	Economics Upper-Division Required Course 2				4	All Majors
ECO	#	Economics Upper-Division Elective 1				3/4	Elective
ECO	#	Economics Upper-Division Elective 2				3/4	Elective
ECO	#	Economics Upper-Division Elective 3				3/4	Elective

Alternatively, the courses can be listed as columns, with the learning outcomes as rows in the table. This method allows for exploring the course coverage more deeply, however other course maps at USF are aligned with the prior structure. Either is acceptable.

Prefix	ECO	ECO	ECO	ECON	ECO	ECO	ECO	ECO	ECON
Number	#	#	#	#	#	#	#	#	#
Name	Intro	Mid-Level 1	Mid-Level 2	Mid-Level Required	Upper-Division Required 1	Upper-Division Required 2	Upper-Division 1	Upper-Division 2	Upper-Division 3
PLO1									
PLO2									
PLO3									
Year	1	2	3	3	4	4	3/4	3/4	3/4
Requirement	All Majors	Some Majors	Elective	Elective	All Majors	All Majors	Elective	Elective	Elective

Starting from this structure, the program indicates in which courses the PLOs are "Introduced" to the students, or when the students are first accessing information about the PLO from instruction, by designating them with an "I". There is likely course-level assessment of the PLOs in the courses where the PLOs are introduced, but because the courses are earlier in the sequence, the program does not use the course-level assessment for program-level assessment. In this case, all of the PLOs are introduced in the introductory majors course; this is not always the case with all programs, but it is a compliant possibility.

COURSES AND EXPERIENCES						**COURSE ATTRIBUTES**	
Prefix	**Number**	**Title**	**PLO 1**	**PLO 2**	**PLO 3**	**Year**	**Requirement**
ECO	#	Economics Introductory Course	I	I	I	1	All Majors
ECO	#	Economics Mid-Level Elective Course 1 (concentration-related)				2	Some Majors
ECO	#	Economics Med-Level Elective Course 2				3	Elective
ECO	#	Economics Mid-Level Required Course				3	Elective
ECO	#	Economics Upper-Division Required Course 1				4	All Majors
ECO	#	Economics Upper-Division Required Course 2				4	All Majors
ECO	#	Economics Upper-Division Elective 1				3/4	Elective
ECO	#	Economics Upper-Division Elective 2				3/4	Elective
ECO	#	Economics Upper-Division Elective 3				3/4	Elective

Then, the mid-level courses where the PLOs are discussed with students and students should begin to gain a grasp on the content are labeled with an “R” for “Reinforced.” A course in which content is reinforced can be at any year and/or level within the program and is typically at a higher depth than those courses in which content is introduced. For this reason, it is unlikely to have many courses with more than one PLO at the reinforced level (such as Mid-Level Elective Course 1 here), although it is a possibility.

COURSES AND EXPERIENCES						COURSE ATTRIBUTES	
Prefix	Number	Title	PLO 1	PLO 2	PLO 3	Year	Requirement
ECO	#	Economics Introductory Course	I	I	I	1	All Majors
ECO	#	Economics Mid-Level Elective Course 1 (concentration related)	R	R	R	2	Some Majors
ECO	#	Economics Med-Level Elective Course 2	R			3	Elective
ECO	#	Economics Mid-Level Required Course		R	R	3	Elective
ECO	#	Economics Upper-Division Required Course 1		R		4	All Majors
ECO	#	Economics Upper-Division Required Course 2			R	4	All Majors
ECO	#	Economics Upper-Division Elective 1		R	R	3/4	Elective
ECO	#	Economics Upper-Division Elective 2				3/4	Elective
ECO	#	Economics Upper-Division Elective 3				3/4	Elective

In the next step of the curriculum map generation process, the faculty discuss in which courses students are anticipated to gain more complete skill and knowledge in the PLOs. The courses are labeled with an “M” for “Mastered.” This requires the PLO to be addressed at a substantively higher level than a course where it is introduced and/or reinforced. To this point, these typically occur in the later years of the degree.

COURSES AND EXPERIENCES						COURSE ATTRIBUTES	
Prefix	Number	Title	PLO 1	PLO 2	PLO 3	Year	Requirement
ECO	#	Economics Introductory Course	I	I	I	1	All Majors
ECO	#	Economics Mid-Level Elective Course 1 (concentration related)	R	R	R	2	Some Majors
ECO	#	Economics Med-Level Elective Course 2	R	M	M	3	Elective
ECO	#	Economics Mid-Level Required Course	M	R	R	3	Elective
ECO	#	Economics Upper-Division Required Course 1	M	R	M	4	All Majors
ECO	#	Economics Upper-Division Required Course 2	M	M	R	4	All Majors
ECO	#	Economics Upper-Division Elective 1	M	R	R	3/4	Elective
ECO	#	Economics Upper-Division Elective 2	M	M	M	3/4	Elective
ECO	#	Economics Upper-Division Elective 3	M	M	M	3/4	Elective

Finally, those courses where the PLOs are Mastered are discussed by the faculty to choose those which will be used for program-level assessment. These courses are designated with an “A” for “Assessed.” Assessment is best identified in courses such as a capstone, however, this program has no such course. So, a variety of upper-level courses were chosen. In the case of PLO1, there are several courses in which the PLO is assessed. This is an acceptable choice when the method of assessment allows for some uniformity across the courses, such as embedded test questions or a common rubric for written work. In addition, a course such as one required for a concentration can be used for assessment that includes students in that concentration, while another should be selected to ensure the assessment covers all students in the program.

COURSES AND EXPERIENCES						**COURSE ATTRIBUTES**	
Prefix	**Number**	**Title**	**PLO 1**	**PLO 2**	**PLO 3**	**Year**	**Requirement**
ECO	#	Economics Introductory Course	I	I	I	1	All Majors
ECO	#	Economics Mid-Level Elective Course 1 (concentration related)	R	R	R	2	Some Majors
ECO	#	Economics Med-Level Elective Course 2	R	M	M	3	Elective
ECO	#	Economics Mid-Level Required Course	M	R	R	3	Elective
ECO	#	Economics Upper-Division Required Course 1	M	R	A	4	All Majors
ECO	#	Economics Upper-Division Required Course 2	M	A	R	4	All Majors
ECO	#	Economics Upper-Division Elective 1	A	R	R	3/4	Elective
ECO	#	Economics Upper-Division Elective 2	A	M	M	3/4	Elective
ECO	#	Economics Upper-Division Elective 3	A	M	M	3/4	Elective

The curriculum map is now complete! It is important to note that in this example, the PLOs are all addressed in all of the courses; this is not a requirement, although it is a possibility. Some specific courses may only address one PLO. However, there should not be a course required for the program that does not address any of the PLOs; in this scenario, the course should be eliminated as a requirement since it does not progress students toward the goal of learning program content.

Use of Assessment Results Supplement

Collecting data, especially large amounts of data, can lead to "analysis paralysis" and it is challenging to determine what is the best next step to take. Here are some ideas of tangible improvements that would be compliant with SACSCOC requirements, if warranted by the assessment data. In Year Two of the three-year assessment cycle, there is a requirement to include a description of the actionable steps that the program will take to achieve improvements and/or to maintain an already high level of achievement.

1. Enhance Curriculum Mapping to include projects, assignments, and other key learning opportunities across classes to explore learning outcome development from an entry to an exit level.
2. Revisit or revise assessment method/rubric
3. Revisions to the plan of study/curricular offerings
4. Development of new modules/courses
5. Add course modules addressing certain content
6. Increase time spent on certain subject areas in class
7. Pedagogical innovations
8. Identifying areas for faculty development
9. Strengthen the previous SLO according to Bloom's Taxonomy.
   For example: If the previous SLO went "Students will be able to **understand** modern economic theory", new revised SLO may go as follows "Students will be able to **apply** modern economic theory to the real-world problems". Or even, "Students will be able to **develop** an idea using modern economic theory and **defend** it before the panel of faculty members".
10. Share the results with the teaching faculty, and stress the importance of the areas that were identified as being weak during the assessment, so that faculty are aware of the areas where students are struggling and adjust classes accordingly.
11. Don't forget!
    a. It is not compliant to devise action steps that focus on "fixing" students, because we are interested in assessing the program as a whole and over a longer time than any individual cohort. So, if there is a desire to implement decisions such as sending students to tutoring labs or writing centers, hiring consultants to change student behavior. If these are needed, the program should seek to integrate these with larger programmatic improvements that will reduce the need for such activities in the future.
    b. Statements such as "we will continue to monitor" achievement without thoughtful reflection and actionable next steps are also not compliant. When the achievement of the learning outcome is high, it is a great sign that the program is meeting its goals. This means that it would be appropriate to move to another outcome, increase expectations, and/or expand the level of the assessment (i.e., from a multiple-choice quiz to a written project).