FLORIDA STATE UNIVERSITY
INSTITUTIONAL PERFORMANCE AND ASSESSMENT

EDUCATIONAL PROGRAMS ASSESSMENT HANDBOOK

Guidelines for Assessing Student Learning Outcomes and Program Outcomes

Last Updated in June 2024

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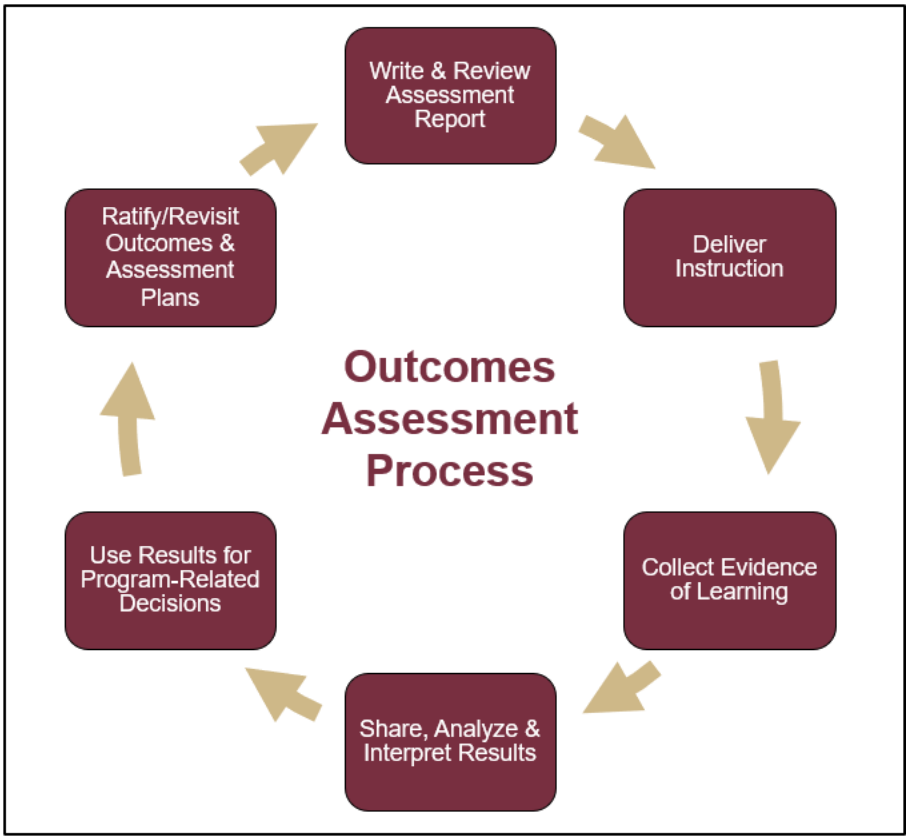
OVERVIEW OF ASSESSMENT

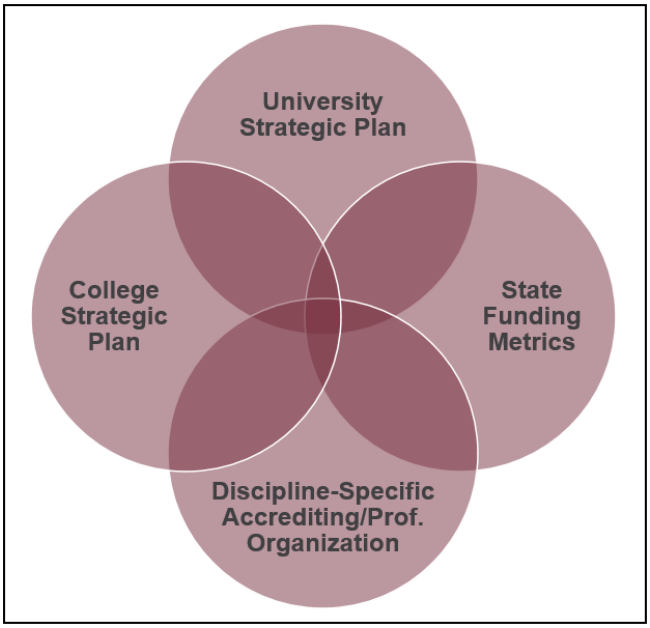
What Is Assessment?

Assessment is a cyclical planning, implementation and evaluation process that allows us to know whether our practices are meeting our own expectations. Every educational program at FSU (and at every other accredited institution in the United States) defines and sets goals for student learning and program success that are consistent with FSU's mission. These goals are assessed and reviewed annually. Thus, the assessment process reinforces educational quality and program effectiveness through a systematic review of goals and outcomes.

All educational programs develop **Student Learning Outcomes** (SLOs), which are the knowledge, skills, values, and attitudes that students are expected to attain throughout their studies in a program and/or in a specific course. SLOs encapsulate what students will be able to know, do, and care about as a result of their learning experiences by the time they graduate. Every year, using best-suited approaches, instructors assess whether students were able to demonstrate that they indeed achieved the set learning goals. Depending on how well the students met the criteria, program faculty establish a plan of action for the next academic year, implement it and then then circle back to check whether the changes put in place led to the desired improvement in learning.



In addition to SLOs, all academic units define and set expectations for their **Program Outcomes** (POs). POs are the broader, non-curricular priorities of educational programs and academic departments; they are typically focused on various aspects of student, faculty and program success like admissions and enrollment, graduation and retention, research and teaching achievements, etc. See Appendix A for a more descriptive definition of this and other assessment-related terms. POs are aligned with the FSU Strategic Plan and may also support state funding metrics, strategic plans of the unit's College, and/or the requirements of discipline-specific accrediting agencies and governing bodies.



Why Do We Assess Outcomes?

The main and maybe even only reason why educational programs engage in assessment is to be able to make data-guided decisions related to improving student learning. "*Purpose of assessment is to give feedback to faculty and staff on what is and isn't working and decide what changes are warranted, if any, to help students learn and succeed even more effectively.*" (Suskie, 2018, p. 87). There is really no value in assessing SLOs if this process does not inform and improve instruction so that our students can receive best possible education.

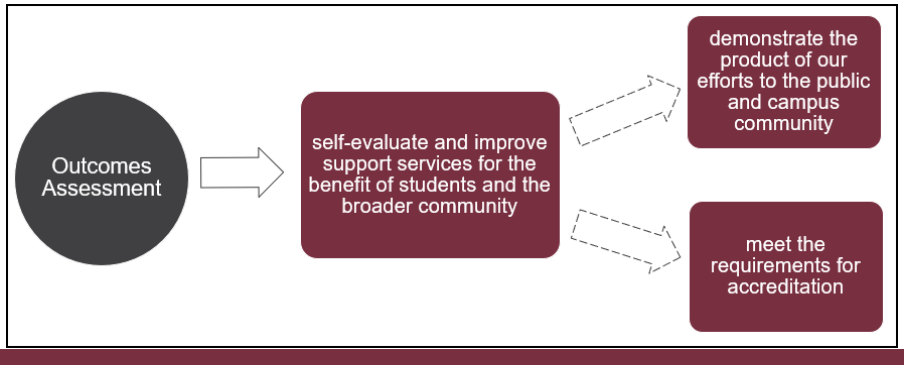
Assessment also helps us quantify the daily work that we put into advancing the educational mission of FSU and to know, for a fact, that we help students learn and prepare them to be successful in their jobs, graduate studies, and hopefully, life. It is important to understand that we already, on a regular basis and oftentimes informally, evaluate student learning and enhance instruction. What structured, formal assessment

allows us to do is to be more organized and intentional in documenting and telling the story of the learning that takes place in our educational programs.
As a by-product and a consequence of our assessment and quality enhancement work, we also meet important expectations that various state, regional and federal organizations have for FSU as an institution of higher learning. Over the last few decades, accountability for public funds has increased and expectations became more output-focused. Up until recently, per Regulation 8.016, the Florida Board of Governors (BOG) required all institutions in the State University System of Florida to establish a process for certifying that each baccalaureate graduate has completed a program with clearly articulated expected core student learning outcomes. These outcomes constituted state-mandated Academic Learning Compacts (ALCs).

In addition to learning outcomes, the BOG closely monitors universities' student success outcomes (e.g., retention, graduation rates, post-graduation employment) and determines state funding based on how well each public university meets specific metrics. Thus, assessment of POs strengthens our position in securing state funding and demonstrating the products of our efforts to the public and campus community.

Finally, by engaging in the systematic, explicit and documented assessment of learning outcomes and program effectiveness, the university meets several accreditation requirements. In the United States, institutional accrediting organizations are charged with the oversight of universities' quality and effectiveness. Federal funds, such as student financial aid, are tied to accreditation. The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) is the current institutional accreditor for FSU. SACSCOC's accreditation standards require evidence that the university engages in genuine, systematic, and ongoing reflective evaluation practices and uses the results of these assessments to enhance educational and student support services. FSU's accreditation was reaffirmed following its most recent decennial review in 2024.

SACSCOC believes that "*[s]tudent outcomes – both within the classroom and outside of the classroom – are the heart of the higher education experience. Effective institutions focus on the design and improvement of educational experiences to enhance student learning and support appropriate student outcomes for its educational programs and related academic and student services that support student success. To meet the goals of educational programs, an institution is always asking itself whether it has met those goals and how it can become even better.*" (SACSCOC Resource Manual, p. 68).



Where Do We Assess Outcomes?

Outcomes are typically assessed at the level of individual educational programs, which are defined as "*[a]n organized curriculum leading to a degree in an area of study recognized as an academic discipline by the higher education community*", commonly assigned a unique Certification of Instructional Programs (CIP) code and offering one or more majors (BOG Regulation 8.011). For example, academic department of Chemistry and Biochemistry has 3 degree programs: Biochemistry, Chemical Science, and Chemistry. Each academic degree program, in turn, offers at least one academic major at one or more degree levels (Bachelor's, Master's, Doctorate). So, for assessment purposes, Chemistry Bachelor's with its 3 offered majors is a distinct educational program. Please note that different degree types (e.g., Bachelor's of Arts vs. Bachelor's of Sciences) do not constitute separate educational programs and thus do not require a separate assessment and reporting structure.

College	Department	Degree	Major	Degree Level
Arts and Sciences	Chemistry and Biochemistry	Biochemistry	Biochemistry	Bachelor's
		Chemical Science	Chemical Science	Bachelor's
			Chemical Sciences / FSU Teach	Bachelor's
		Chemistry	Analytical Chemistry	Master's, Doctorate
			Biochemistry	Master's, Doctorate
			Chemistry	Bachelor's, Master's, Doctorate
			Environmental Chemistry	Bachelor's
			Inorganic Chemistry	Master's, Doctorate
			Materials Chemistry	Bachelor's, Doctorate
			Nuclear Chemistry	Master's, Doctorate
			Organic Chemistry	Master's, Doctorate
			Physical Chemistry	Master's, Doctorate

In addition to degrees, academic units can also offer graduate and undergraduate certificates. Certificates are distinct educational credentials and are therefore subject to program-level assessment. Current inventory of academic degree programs, majors, and certificates is available in FSU's Degree and Certificate Program Inventory. Static version of the inventory is also available (click here for the July 2023 version).

Each educational program is required to formulate and actively pursue in any given year at least 1 PO and at least 2 SLOs for all degree levels, except Bachelor's. Due to increased accountability for undergraduate educational outcomes, Bachelor's-level programs are requested to articulate at least 5 SLOs, at least 3 of which must be in 3 different categories from the following list: content/discipline knowledge and skills, critical thinking skills, and communication skills.

Degree Level	Minimum Number of Program Outcomes	Minimum Number of Student Learning Outcomes
Bachelor's	1	5 • At least 1 for content/discipline knowledge & skills, • At least 1 for communication skills, • At least 1 for critical thinking skills
Master's	1	2
Specialist	1	2
Doctorate	1	2
Professional	1	2
Certificate	1	2

Educational programs that are offered on multiple campuses (Tallahassee, Florida; Panama City, Florida; Sarasota, Florida; Panama City, Republic of Panama) and/or in multiple modes of delivery (face-to-face and distance learning/online) are expected to have the same SLOs, but they may be assessed using different approaches (in different courses, using different assignments and rubrics, with different expected learning levels). Instructional faculty who belong to the same educational program delivered at different locations/modalities should jointly decide which student knowledge, skills, and values/attitudes to select for SLOs. However, learning data collection, analysis, and improvement of outcomes should be conducted and reported separately. A comparative assessment of SLOs may note any significant differences in achieving outcomes between different geographic locations or delivery modes. POs may be different for each of the program's locations/modalities (e.g., Computer Science Bachelor's program at the Tallahassee campus can have a PO on 4-year graduation rates, while the Computer Science Bachelor's program at the Panama City, Florida campus may have a PO on retention). Additional details are provided later in this Handbook and in the User Guide for documenting the assessment reports in the university system.

When Do We Assess Outcomes?

While the process of educational betterment is always continuous and ongoing, we only formally evaluate attainment of outcomes once a year, typically at the start of the fall semester. The general (default) calendar for educational programs specifies that outcomes assessment should be conducted in mid-late August, which allows the programs to use information/data from the academic year that just ended to inform program-level changes for the academic year that is about to begin. Completing assessment components in the recommended order and by the recommended due dates best positions the university to engage in meaningful evaluation and enhancement of student learning and program effectiveness.

Most FSU Colleges determine their own exact start and end dates for their assessment timeline based on their faculty and staff availability and the ebb and flow of College's administrative and instructional activities in summer/early fall. In consultation with each College's Dean's Office, the Office of IPA created, annually updates, and makes publicly available the recommended College-specific calendars for completing various components of the assessment process. The default (non-custom) calendar is below:

- **COLLECT DATA AND STUDY RESULTS**
  By the second Friday in August, the program collects information/data from the Spring term (or the entire previous academic year) and assesses the levels at which the outcomes were achieved. Results are analyzed and discussed with appropriate parties within and outside the program. Based on the data and its analysis, every program considers changes to be implemented in the upcoming year to enhance learning and program quality.

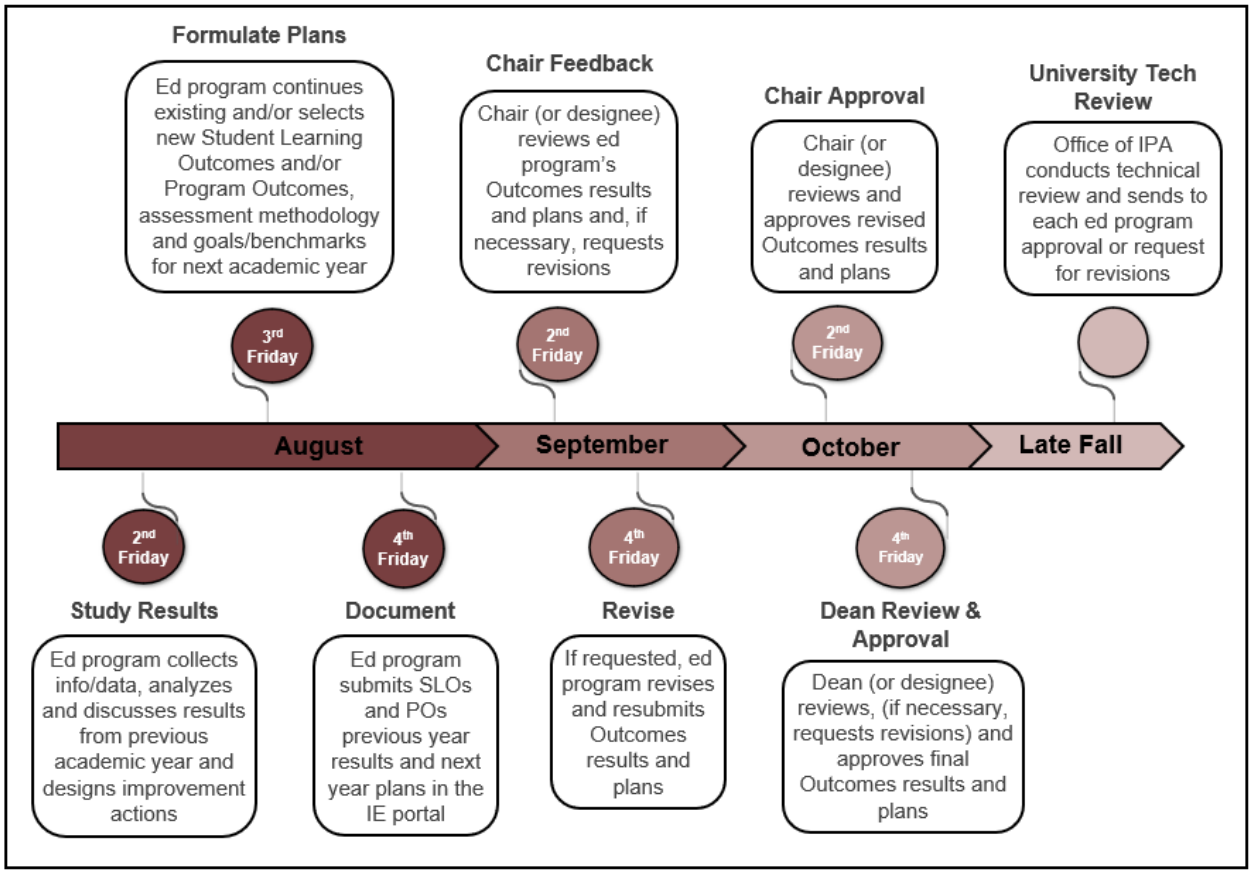
- **FORMULATE PLANS**
  By the third Friday in August, every program decides which current outcomes will be continued into the next year and which current outcomes will be sunset. If new outcomes are selected, their assessment plan is designed, and their learning targets are chosen. All new POs must be aligned with 1-3 Initiatives of the FSU Strategic Plan using corresponding functionality in the university system called Institutional Effectiveness (IE) Portal.

- **DOCUMENT LAST YEAR'S RESULTS AND NEXT YEAR'S PLANS**
  By the fourth Friday in August, educational programs report their results from the previous year, an analysis of the results, and improvement actions in the IE Portal housed in the Nuventive platform at iep.fsu.edu. Respective outcomes are 'continued' into the next year and/or new outcomes with their assessment plans and learning targets are added. The program may use the assessment reporting templates to expedite the documentation and report review process.

- **DEPARTMENT- AND/OR COLLEGE-LEVEL FEEDBACK**
  By the second Friday in September, the Department Chairperson (or designee) and/or College Dean (or designee) reviews educational program's SLOs and POs Results and Plans and, if necessary, requests revisions. Reviewers are encouraged to provide feedback using the standard Review Rubrics and fillable Feedback Forms.

- **REVISE RESULTS AND/OR PLANS AND REVIEW REVISIONS**
  By the fourth Friday in October, educational programs that were asked to improve their assessment report(s) revise and resubmit SLOs and/or POs last year's Results and/or next year's Plans. The Department Chairperson (or designee) and/or the College Dean (or designee) reviews the revised assessment report and approves it. The approval is communicated in writing to the Provost-level representative and/or Office of IPA.

- **<u>UNIVERSITY-LEVEL TECHNICAL REVIEW AND APPROVAL</u>**
  Following the College-level review and approval, the Office of IPA conducts technical review of all assessment reports. Each program either receives a written confirmation that their assessment report meets the standards or receives a written request for revisions. The technical review primarily includes checking for the following surface-level requirements:
    - Last year's Results (Results Statement, Analysis of Results, Improvement Actions) have been entered in the IE Portal and no parts are missing,
    - Next year's Plans (Outcome Name, Outcome Statement, Assessment Plan, Numeric Target) are present and/or have been updated,
    - All active locations/modalities have separate Results,
    - Improvement Action(s) narrative is not exclusively focused on continuing the same practices.



At FSU, the Office of the Provost and Executive Vice President for Academic Affairs is responsible for the overall coordination of the university assessment processes, including those outside of the Academic Affairs Division. Within the Office of the Provost, the Office of IPA provides oversight, quality maintenance, training, and support to all reporting units during all stages of the assessment process. The final review and approval of assessment reports is the responsibility of the Executive Vice President for Academic Affairs or authorized designee(s).

STUDENT LEARNING OUTCOMES

Step 1: Organizing for Assessment

The first step to building or strengthening a meaningful and well-functioning assessment 'ecosystem' is for everyone to understand their roles and responsibilities. Each educational program creates an assessment governance structure most suitable to its size, existing leadership structures, aspirations, and culture.

At the level of educational programs, the assessment process is a shared responsibility between all **departmental faculty**: instructors, undergraduate and graduate program directors, the Department Chairperson, and the (Associate/Assistant) Dean(s). According to the American Association of University Professors (AAUP), "*[a]ssessment of student learning and reform of teaching and academic programs are core academic activities. As such, the AAUP sees them as being the primary responsibility of faculty – individually and collectively. In the classroom, a core element of academic freedom is the autonomy of the individual faculty member to determine what and how to teach. At the same time, the AAUP emphasizes the collective responsibility of the faculty as a whole for academic programs, suggesting that an academic department, for instance, can adopt pedagogical or curricular standards that colleagues teaching the course(s) need to adopt…. There is no reason that a faculty cannot collectively take on the task of identifying student learning outcomes, conducting those assessments, and revising curriculum accordingly*." (Gold, Rhodes, Smith, & Kuh, 2011, p. 7).

Typically, each academic department designates one or two faculty members as **assessment coordinators** who lead and manage the assessment process and implementation of improvements at the level of their educational program(s). However, it is expected that (almost) all program faculty understand, provide input for, agree with, and participate in the assessment and improvement of educational activities. Assessment coordinators can also function as the program's **IE[1] representative(s)** responsible for documenting the assessment reports in the university IE Portal housed in the Nuventive platform at iep.fsu.edu. For small academic departments with few faculty, the Department Chairperson/School Director can assume all three roles: functioning as the assessment coordinator, IE representative and the **department head** who has the responsibility of guiding faculty and committees through the assessment process in a timely, accurate, and meaningful manner.

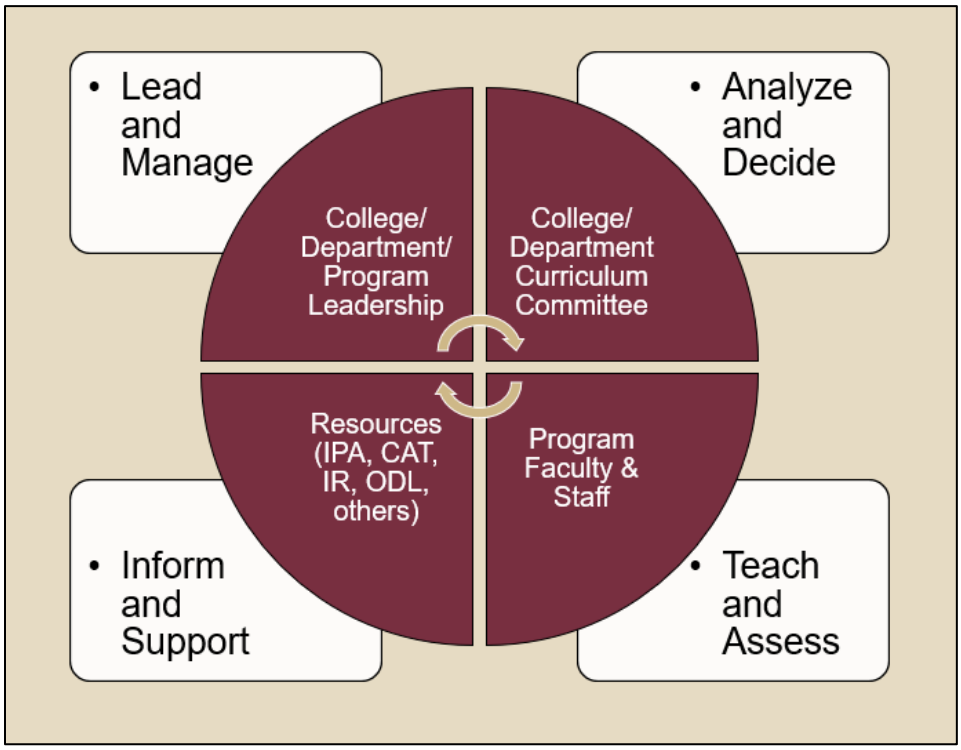
Curriculum committees are integral to the assessment process. Assessment-related activities should be carried out in close coordination with existing college, department,

[1] Institutional effectiveness (IE) refers to the extent to which an institution achieves its mission, goals, and objectives. It involves a systematic and ongoing process of collecting, analyzing, and using data to improve institutional performance and decision-making. Outcomes assessment, on the other hand, is a specific component of IE that focuses on measuring student learning and achievement. It involves the systematic collection, analysis, and use of data to evaluate student outcomes and improve teaching and learning. In summary, IE is a broader concept that encompasses all aspects of an institution's performance, while outcomes assessment is a specific component that focuses on student learning.

and program curriculum committees, especially in cases when new curricular actions or changes are being proposed in furtherance of continuous improvement of student learning. Curriculum committees are often best positioned to determine appropriate SLOs and their assessment approaches as well as to help analyze subsequent evidence of learning and design sound enhancements to teaching and learning experiences.

Several **university resources** are available to support educational programs throughout the assessment process. The Office of IPA offers academic assessment seminars and workshops and IE Portal trainings; the office staff is also available to provide feedback and assistance with drafting learning outcomes and their assessment plans, in addition to helping document the assessment reports in the IE Portal. IPA can also help programs retrieve, aggregate, and visualize learning outcomes data for specific programs, courses, sections, locations/modalities, majors, etc.

The FSU Office of Institutional Research (IR) provides academic departments with data reports on various student success metrics and may generate custom datasets and analytic projects upon request. The FSU Center for the Advancement of Teaching (CAT) supports university faculty by providing workshops and seminars on topics like designing curricula, courses, and assignments that enhance student learning. The FSU Office of Digital Learning (ODL) helps instructors improve educational experiences through training and workshops on using Canvas gradebooks, designing effective assessments, etc.



Step 2: (Re-)Defining Program Mission

Every academic entity (college, department/school, degree/certificate program) should have an active and current mission statement, which is "*a broad statement of what the program is, what it does, and for whom it does it. It should provide a clear description of the purpose of the program and the learning environment. For a given program, the mission statement should, in specific terms, reflect how the program contributes to the education and careers of students graduating from the program. Mission statements for academic programs should reflect how the teaching and research efforts of the department are used to enhance student learning. The mission should be aligned with the Department, College, and University missions. In addition, the mission should be distinctive for your program*." (UCF Academic Assessment Handbook, p. 17).

A well-defined mission statement includes the following components (UCF Academic Assessment Handbook, pp. 17-18):

- **Purpose of the program** – the main reason(s) why your college, department/school, degree/certificate program exists. Your program's focus may be preparing students for work in a particular field or to continue their education at the graduate level.

- **Program's stakeholders** – the groups of individuals for whom the program is provided and/or those who are benefiting from the program. For example, students, employers, graduate programs, faculty, and staff.

- **Primary activities** – the program's most important functions, operations, outcomes and/or offerings that help realize the program's purpose. For instance, education, scholarship, mentoring.

- **Connection to University's mission** – the alignment between the program's mission statement and the mission statement of FSU. Furthermore, program missions should be aligned with the missions of the department/school and college. Your program's mission may be focused on leadership education, which supports part of FSU's mission to "instill strength, skill and character". Another example is a degree program striving to graduate students with strong knowledge and skill set in the data science discipline, which directly aligns with FSU's mission to preserve, expand, and disseminate knowledge in the sciences and technology.

Below are a few examples of mission statements, with the four components of a well-defined mission statement underlined and numbered.

FSU College of Medicine: "The Florida State University College of Medicine will (1) educate and develop exemplary physicians who (3) practice patient-centered health care, discover and advance knowledge, and are responsive to community needs, especially through service to (2) elder, rural, minority, and underserved populations."

The mission statement (4) echoes the university's mission to be dedicated to excellence in service.

Hypothetical Biology program: "The mission of the Biology Bachelor's degree program is to (1) prepare (3) students for employment in various biology-related areas (1) and/or for the pursuit of advanced degrees in biology or health-related processional schools by (3) educating them in the fundamental concepts, knowledge, and laboratory/field techniques and skills of the life sciences."

Hypothetical Engineering program: "The mission of Hypothetical Engineering bachelor's degree program is to (3) educate (2) students from diverse backgrounds in the fundamental skills, knowledge, and practice of Hypothetical Engineering (through courses and an internship) in order to (1) prepare them for Hypothetical Engineering positions in service or manufacturing industries and prepare them for continuing for advanced degrees in Hypothetical Engineering or related disciplines. The program promotes a commitment to continued scholarship and service among graduates and will foster a spirit of innovation. Also, it promotes an environment that is inclusive and diverse."

Step 3: Exploring Student Learning Outcomes

In the field of assessment, Student Learning Outcomes (SLOs) refer to the knowledge, skills, and values/attitudes that students are expected to attain throughout their studies in a program and/or in specific courses. SLOs encapsulate what students will be able to know, do, and care about as a result of their learning experiences by the time they complete the program (Nichols & Nichols, 2005, pp. 74-75; SACSCOC Resource Manual, p. 70; Suskie, 2018, p. 41).

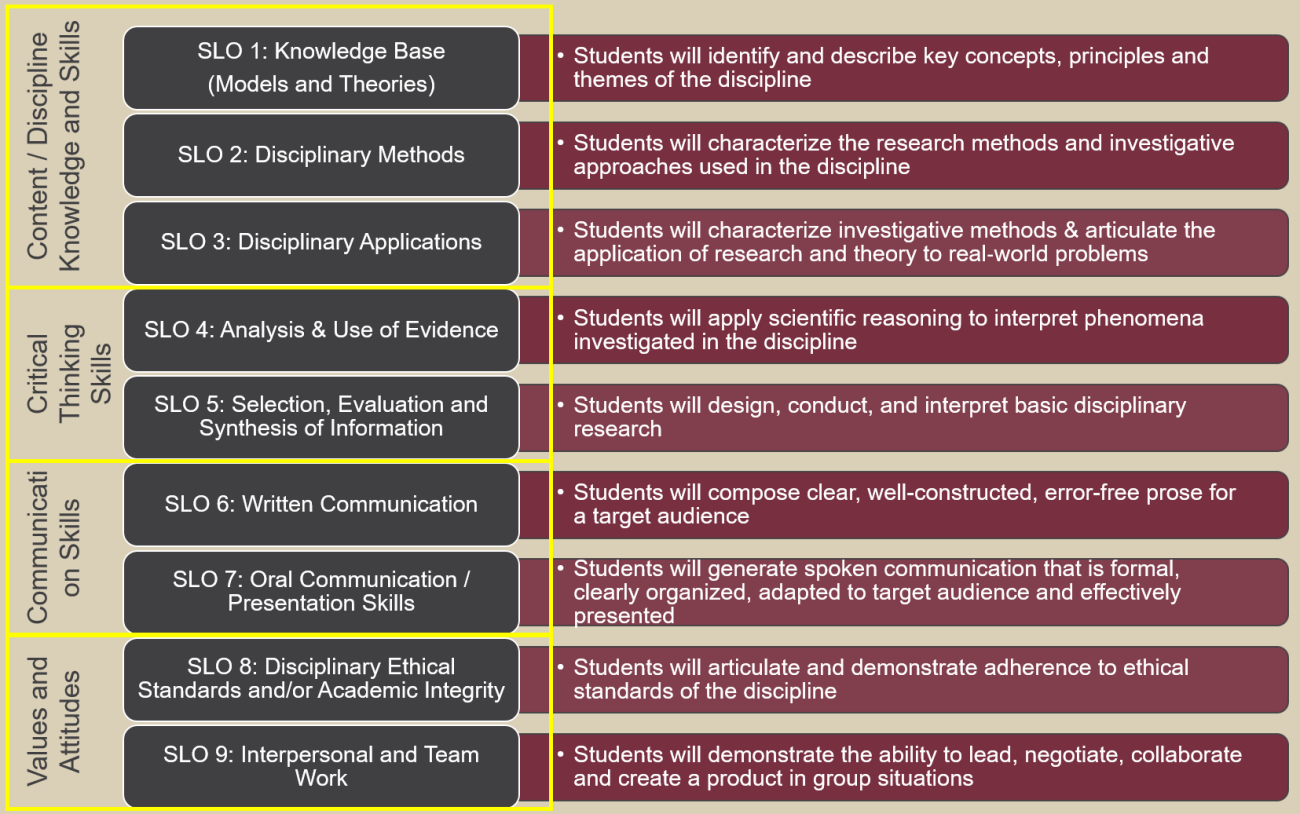
When educational programs engage in the process of identifying, fine-tuning, or 'sunsetting' learning outcomes, it is helpful to study how learning goals are defined and organized (1) by the discipline's accrediting/governing body (if such exist), (2) by similar programs at aspirational and peer institutions, (3) in the various outcome taxonomies and typologies, and (4) in program's historical SLO assessment plans and reports. These resources may help spark ideas, guide decision-making, and ensure that all major goals of learning are addressed.

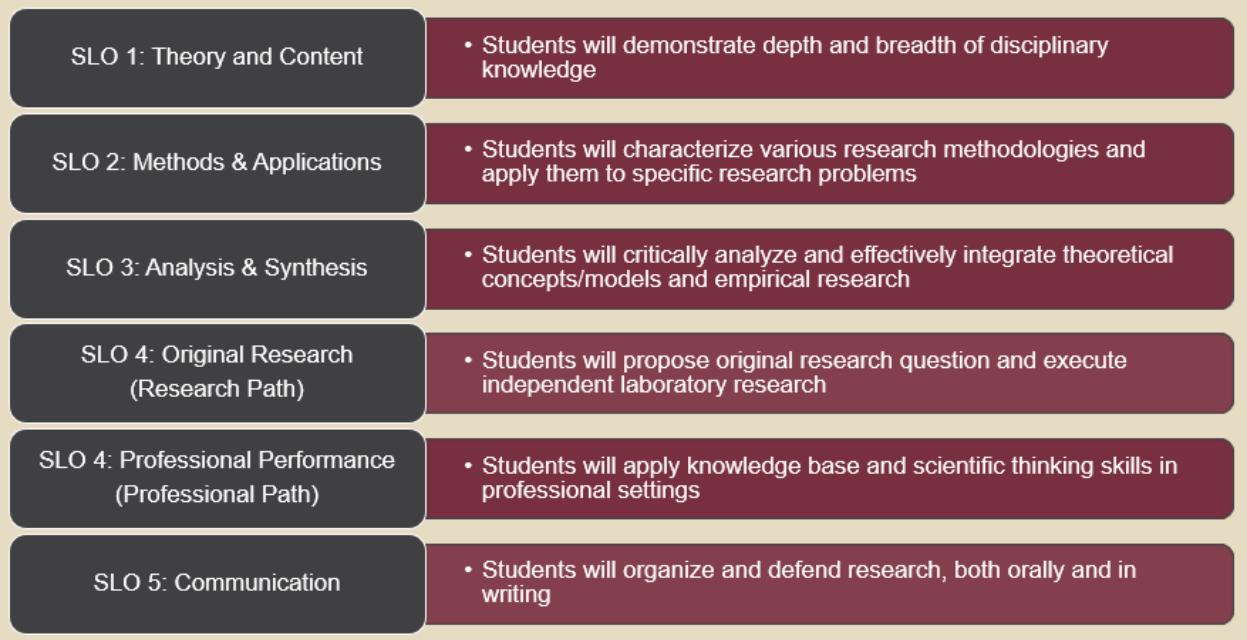
1. Many discipline-specific accrediting agencies and governing bodies prescribe or recommend that academic programs adopt a set of learning outcomes for their students. For example, the Accreditation Board for Engineering and Technology (ABET) requires undergraduate engineering programs demonstrate evidence that graduates attain seven specific learning outcomes that prepare them to enter the professional practice of engineering. The Association to Advance Collegiate Schools of Business (AACSB) also requires business schools to have multiple learning goals for each program, however, the organization does not list specific competencies.

2. Because almost all higher learning institutions are accredited by an institutional accreditor recognized by the U.S. Department of Education, universities participate in regular program-level learning outcomes assessment and improvement as condition of their active accreditation status. Some institutions and/or their educational programs make information about their SLOs publicly available. For instance, University of Florida publishes all of their degree and certificate programs' learning outcomes and their assessment methods in a comprehensive SLO report. So does the University of Central Florida on their webpage and Florida Atlantic University on their webpage. An internet search with the names of your aspirational or peer programs and key words like "student learning outcomes", "program assessment", "objectives", "competencies", etc. should yield a few examples.

3. For programs without specialized accreditation and/or without strong exemplars from peer programs, the Office of IPA recommends beginning program-level learning goals exploration by reviewing existing learning outcomes lists created by assessment theorists and practitioners (see Appendix B for detailed information).

   Because most learning goals are standard, programs are encouraged to select appropriate ones from the undergraduate or graduate learning outcomes lists below and adjust them to fit the specifics of their degree or certificate program.





4. Finally, it is always a great idea to include in the SLO exploration process review of program's current and past outcomes. Oftentimes, most student learning goals previously chosen by faculty and academic leaders are still important and relevant and may continue to be used in evaluation of program effectiveness, with small tweaks or as is. All program-level outcomes and their assessments are documented in the IE Portal. See the IE Portal User Guide for access and navigation instructions.

Step 4: Selecting Student Learning Outcomes

When developing expectations for learning outcomes, program faculty are asked, in addition to their own expert opinion, to also take into consideration perspectives of appropriate constituencies, such as actual/potential employers and graduate programs, recent alumni and current students, and/or if available, discipline-specific accrediting agencies and professional organizations. Essentially, any person or entity who has a stake in assessment and outcomes of student learning can become a collaborator whose contribution informs, corrects and enriches the SLOs selection process (e.g., Austin, 2002; Hart Research Associates, 2013). It is up to each FSU College and/or department/school to decide who, in addition to the department/program faculty, needs to be invited to the table, but generally, the broader the representation of stakeholders, the more supported and successful the students should be throughout their studies and post-graduation.

Because students learn best in programs with intentional, integrated, and cohesive curriculum, faculty (and other constituents) should communicate and collaborate when choosing key learning goals for their students. There are different approaches to establishing a set of essential SLOs that all instructional faculty (and other stakeholders)

can agree upon. One method known as the Delphi technique (Hsu & Sandford, 2007) can be used to achieve consensus regarding the exact repertoire of content knowledge, skills, and values/attitudes program graduates should possess. Suggested implementation steps of this approach are outlined below.

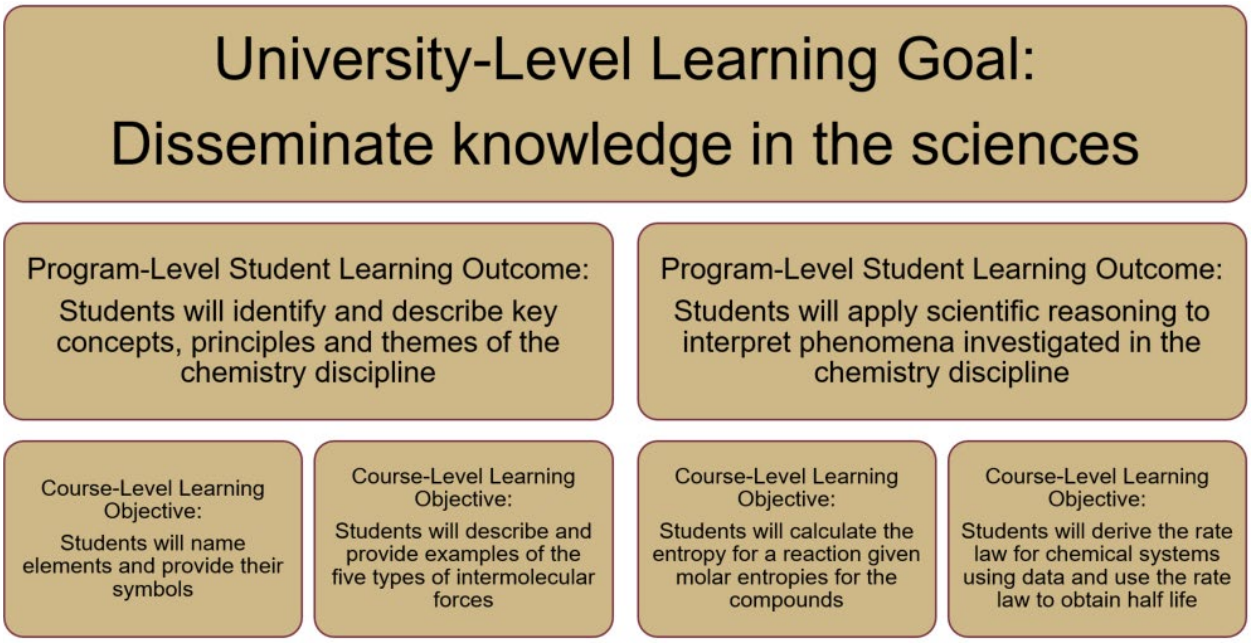
<table>
<tr><th></th><th>Approach A</th><th>Approach B</th></tr>
<tr><td>Step 1</td><td rowspan="2">Process coordinator (department chair, undergraduate or graduate program director, associate/assistant dean) takes on the task of exploring program-level learning outcomes from the four sources listed in the section above, reviews them, and creates the longlist of potential SLOs.</td><td>Process coordinator (department chair, undergraduate or graduate program director, associate/assistant dean) solicits up to five learning outcomes from each faculty member (and other participants) independently to prevent contributors from inadvertently influencing each other's selection.</td></tr>
<tr><td>Step 2</td><td>After all lists with potential learning goals are received, the coordinator narrows down learning goals, wordsmiths their statements, and distributes the aggregated catalog of SLOs back to all faculty (and other parties) taking part in the process.</td></tr>
<tr><td>Step 3</td><td colspan="2">Participants are asked to check off a handful of the most important SLOs from the longlist: 5-7 SLOs in undergraduate programs and 2-3 SLOs in graduate and certificate programs. Checked-off outcomes may also be rank-ordered to provide additional information about their relative importance.</td></tr>
<tr><td>Step 4</td><td colspan="2">The lists are collected again, checkmarks (and rankings) are tallied, and SLOs with the most votes are moved to the shortlist. The shortlisted learning outcomes are shared with the group, and if a consensus is reached, the final list of SLOs is adopted by the program.</td></tr>
<tr><td>Step 5 (if needed)</td><td>If opinions are not converging, group members may provide their rationale for excluding or including certain learning goals to the coordinator who then makes the final selection.</td><td>If opinions are not converging, group members may provide their rationale for excluding or including certain learning goals to the coordinator. In the final round, "the list of remaining items, their ratings, minority opinions, and items achieving consensus are distributed to the panelists. This round provides a final opportunity for participants to revise their judgments." (Hsu & Sandford, 2007, p. 3). After the second vote, either unanimity or sufficient general agreement is typically reached.</td></tr>
</table>

SLOs selected for an educational program can and should be changed periodically. There are two primary reasons for occasionally updating the selection of learning outcomes. First, if an SLO has been assessed and has been met consistently for five or more years, there is sufficient evidence that the program curriculum is effective at preparing students to demonstrate knowledge and skills associated with this learning outcome. At this point, the SLO may be 'rotated out' of the shortlist, and another, perhaps almost as important, learning outcome can be 'rotated in'. This approach is especially useful for departments/programs with limited assessment resources.

The second reason for updating the selection of SLOs is changes in the academic discipline itself, such as development of new tools and technologies, recent scientific discoveries, and/or innovative techniques. Once the new content is incorporated into the curriculum, there may be a need to either select new SLOs or update existing SLOs, so they include the new knowledge sets and skills.

Step 5: Formulating the Statement of SLO

Learning outcomes in an educational program are content knowledge, skills, values, and attitudes that students will have attained by the time they complete the program's course of study. SLOs are program-level learning outcomes; they are not course-level learning objectives or university-level/institutional learning goals. Although aligned with and supportive of both, degree/certificate program-level SLOs are narrower than university learning goals expressed in the FSU mission statement and are broader than the learning objectives of individual courses in the program curriculum. Because an academic program should be greater than the sum of its parts (courses), program-level student learning outcomes combine course-level objectives into an amplified, deepened, cohesive, integrated whole.



High-quality statements of learning outcomes have several important characteristics. When formulating SLO statements, it is useful to design them to be S.M.A.R.T. – Specific, Measurable, Attainable/Appropriate, Results-Oriented, and Time-Bound.

- **Specific**: A clearly articulated and distinguishable set of knowledge, skills, values, or attitudes is identified. An SLO should express a single idea, even if it has multiple components. For example, "*Students will define the essential aspects of complex problems, investigate them, propose solutions, and evaluate the relative merits of alternative solutions*" is a strong statement of an SLO focused on problem-solving skills. Although there are several distinct actions packed in one statement, they are all part of a larger learning goal, they fit together under one umbrella, and can be taught and assessed collectively (Suskie, 2018).

- **Measurable**: Evidence of learning can be demonstrated, observed, and assessed. Avoid statements such as "*Students will learn, understand, appreciate, comprehend, be aware of, feel, or think*" and the like. When writing SLO statements, the recommendation is to use concrete action verbs that describe what students will be able to do in the cognitive (see Appendix C and Adelman, 2015), affective, or psychomotor domains. Proper use of action verbs helps instructors to think through and communicate to the students what will be learned and how it will be assessed.

- **Attainable/Appropriate**: The desired knowledge, skills, values, and attitudes can be achieved by a typical student through learning experiences in the program. For example, in order to demonstrate communicative fluency, it is reasonable to expect students at the bachelor's level to "*develop and present cogent, coherent and substantially error-free writing for communication to general and specialized audiences*", whereas students at the master's level may be expected to "*create sustained, coherent arguments or explanations summarizing his/her work or that of collaborators in two or more media or languages for both general and specialized audiences*" to demonstrate the same SLO but to a more advanced stage (DQP, 2014, p. 30).

- **Results-Oriented**: SLOs should reflect what students will have learned rather than what content will be taught or what teaching activities will take place in various courses and/or overall curriculum. Using the 'backward curriculum design' (Wiggins & McTighe, 1998) approach may help formulate results-oriented SLOs. First, identify which competencies students in your program should attain/learn by the time they graduate, then determine what assessment sources and tools (essay, oral presentation, thesis, rubric, etc.) will generate acceptable evidence of their learning of the said competencies, and finally, plan and design learning experiences and instruction that will best position the students to do well on those assignments.

- **Time-Bound**: Students should be able to master and competently demonstrate learning outcomes by a certain milestone. SLOs are oftentimes set to be achieved by the time students complete the entire program of study. In these cases, assessment of SLOs is tied to some culminating learning experience or product like a capstone project, thesis/dissertation, comprehensive exam, art exhibition, etc. However, many SLOs are achieved by the end of a specific course or a co-curricular experience (e.g., study abroad, internship, UROP, LLC).

Consider several examples below that illustrate SLO statements with various shortcomings and their improved versions.

Initial SLO Statement	Main Issue	Advanced SLO Statement
Students will produce high-quality research	Not **specific** enough (*what is high-quality research?*)	Upon completion of the doctoral program, students will design and conduct an original empirical research study using appropriate methodology and data analytic techniques
Student will show appreciation for visual art	Not **measurable** (*how is appreciation demonstrated?*)	Upon completion of ART3605, students will identify information relevant to the meaning of images and visual media, will identify their physical, technical and design components, and will situate them in cultural, social and historical contexts (ACRL, 2011)
Students will describe modern ethical issues in healthcare	Not **appropriate** for a Master's program (*simply describing may be too easy*)	Upon completion of the Master's program, students will articulate and challenge a tradition, assumption or prevailing practice within the healthcare field by raising and examining relevant ethical principles (p.30 in DQP, 2014)
Students will be taught statistical methods and reporting	Not student **results-oriented** (*what is being measured: teaching or learning?*)	Upon completion of the course of instruction, students will be able to explain application of complex statistical methods to technical and non-technical audiences and visualize results in an accessible manner (p.10 in ASA, 2014)
Students will deliver nursing care to patients	Not **time-bound** (*when is the skill mastered by students and assessed?*)	Upon completion of Professional Nursing Internship (NUR4945) capstone course, students will plan and provide patient-centered, empathic, and coordinated care that contributes to safe and high quality patient outcomes (CSUF School of Nursing)

Step 6: Aligning SLOs and Curriculum

Most educational programs use a 'forward curriculum design' approach, which "*starts with syllabus planning, moves to methodology, and is followed by assessment of learning outcomes. Resolving issues of syllabus content and sequencing are essential starting points with forward design*" (Richards, 2013). In 'forward-designed' curricula, once SLOs for a degree/certificate program have been identified and formulated, they are mapped onto the existing program curriculum (or proposed program curriculum for new degree/certificate programs). This process is referred to as 'curriculum mapping'. Narrowly speaking, a curriculum map is a chart that shows in which specific courses various competencies are initially introduced, further developed and reinforced, and finally mastered and assessed.

The rows in the curriculum map/matrix contain SLOs that specify knowledge, skills, values, and attitudes that students will attain throughout their studies in a program. The columns usually contain courses required to graduate from a given program. For programs with extensive course offerings, the rows and columns can be flipped, so that SLOs are listed across the top and curricular requirements are listed in the left column.

The intersection cells contain information about how each course/learning experience supports each SLO: I=Introduced, R=Reinforced and Practiced, and M=Mastered. "*Such codes help demonstrate that the program has progressive rigor – one of the characteristics of effective curricula. They also help identify assessment opportunities; the courses in which students are supposed to demonstrate satisfactory achievement are often ideal places for assessment*." (Suskie, 2018, p. 80). The star (*) marks the points in the curriculum when evidence of student learning is collected to determine attainment of learning goals and overall program effectiveness.

Bachelor's Program Example					
	Introductory Theory Course XXX2000	Research Methods Course XXX3000	Lab/ Practicum XXX3500	Advanced Content Course XXX4000	Capstone Course XXX4999
SLO #1	I, R, M*	R			M
SLO #2	I	I, R, M*	R		M
SLO #3		I		R, M*	
SLO #4	I		R	R	M*
SLO #5			I	R	M*

Although most often the columns in the curriculum map/matrix will only contain required courses, other essential program curriculum elements may also be included. Depending on the complexity of the curriculum, degree type (e.g., MFA vs. MA) and degree level (Bachelor's, Specialist, Master's, Doctorate, Certificate), required learning experiences may include internships, department symposium, art exhibition, national licensure exam, qualifying or comprehensive exam, prospectus/dissertation and defense, etc.

Research Doctoral Program Example						
	Theory Course XXX5000	Research Methods Course XXX5500	Graduate Seminar XXX6000	Qualifying Exam	Prospectus	Dissertation
SLO #1 Discipline Knowledge	I		R, M	*	M	
SLO #2 Methods/ Applications		I	R, M	*	M	
SLO #3 Written Communication	I		R	R	M	*

Aligning intended SLOs with program curriculum is a hugely beneficial activity. The mapping process allows us to visually represent how learning is scaffolded over the course of the curriculum and makes visible how courses in a curriculum align to the learning outcomes to which that curriculum strives. The curriculum map/matrix helps reveal gaps ('under-taught' SLOs) and redundancies ('over-taught' SLOs), improves communication and encourages reflective practice and ultimately, benefits student learning experience and outcomes. The mapping process "*allows a conversational space and lens through which to examine our educational design*" (National Institute for Learning Outcomes Assessment, 2018, p. 5) and "*provides a means to counteract incoherence and fragmentation of the college experience*" (Jankowski, 2017, p. 10).

The FSU IPA Office created and made available for download curriculum map/matrix templates for programs of various degree levels (Bachelor's, Master's, Doctorate, and Certificate). The templates also offer examples of aligning SLOs and curriculum in programs with sufficiently distinct 'paths' (majors, degree types, and/or concentration tracks). Each file contains additional information about curriculum mapping and specific instructions on how to fill out the map/matrix. Further, each file offers an example of an abbreviated completed SLOs x Curriculum map/matrix and a partially filled out template. The templates may be adjusted to meet program needs. More detailed information about the mapping process is provided in Appendix D. IPA staff are available by request to facilitate a curriculum mapping session for academic departments and programs.

Step 7: Choosing Best-Fitting Assignments

After students have been provided with sufficient opportunity to develop each SLO (i.e., each learning outcome was introduced, reinforced/practiced, and mastered), evidence of student learning is collected. To determine if students have indeed gained the desired knowledge, skills, and values/attitudes, each learning outcome is measured using the means of assessment best suited to the learning outcome. For example:

- The critical thinking skills of students in Political Science may be best assessed through an evaluative report that provides analysis of a political organization,
- The communication skills of students studying Russian may be best showcased through an oral presentation and evaluated by the means of a rubric that allows for scoring of pronunciation, fluency, and use of vocabulary,
- The technical skills of students in Electrical Engineering may be best measured through a lab report documenting proper use of specialized equipment and techniques,
- The professional attitudes and values of students in Social Work may be best gauged using a reflective essay on confidentiality limits.

Put simply, "*assessments should reveal how well students have learned what we want them to learn while instruction ensures that they learn it. For this to occur, assessments, learning objectives, and instructional strategies need to be closely aligned so that they reinforce one another.*" (Eberly Center).

Creating new or aligning existing assignments to appropriately assess the desired SLO can seem daunting. Using Bloom's "Knowledge, Assessment, and Verb Wheel" (shown below) may help identify appropriate assignments and artifacts that best match how to assess different depth of learning in cognitive domain using specific observable behaviors/actions demonstrated by the student. The wheel has the depth of learning in the innermost circle, followed by related action verbs, like those frequently used in developing SLO statements, in the second circle. The outermost circle contains means of assessment that align with the depth of learning and action verbs of the SLO.

This model can be used to simplify the process of selecting an appropriate assessment approach for a particular learning outcome. Let's use the following SLO Statement as an example: "*Upon completion of the master's program in nursing, students will describe and critique a tradition, assumption, or prevailing practice within the healthcare field by identifying and examining relevant ethical principles*." The four action verbs (underlined) require students to:

- 'Remember', which is Level 1 of learning, – the action verb is 'Identify',

- ‘Understand’, which is Level 2 of learning, – the action verb is ‘Describe’,
- ‘Analyze’, which is Level 4 of learning, – the action verb is ‘Examine’,
- ‘Evaluate’, which is Level 5 of learning, – the action verb is ‘Critique’.

Looking to the outermost circle of the wheel for Levels 1, 2, 4 and 5, an instructor might choose to have students complete a case study assignment and use submitted reports to assess the target SLO.

When instructors decide which specific assignments to use for assessment of different SLOs, they should be mindful of several important distinctions.

Assignment vs. Artifact vs. Assessment. While this degree of precision in use of assessment-related terminology is not always followed, distinguishing between assignments, artifacts, and assessments can make the process of aligning SLOs and assignments flow more easily.

- **Assignments** are academic tasks given to students so they can demonstrate learning. An assignment typically includes a prompt, such as a question that students need to answer or directions that they need to follow in order to complete the task.

- **Artifacts** refer to the "products" of learning, some tangible demonstrations of competencies or records of student work. Artifacts may be familiar items such as essays and term papers written by students or their answers to quizzes and tests. They can go beyond the traditional paper or presentation slides and may include audio- and/or video-recorded performances in dance, theatre, or music or artworks such as paintings, sculpture, or digital art (Watson, 2014). Artifacts can be evaluated to determine attainment of learning outcomes.

- **Assessment** in broad terms is the process of "*deciding what we want our students to learn and making sure they learn it*." (Suskie, 2018, p. 8) More narrowly, assessment refers to the processes, instruments/tools, and methods used to evaluate student artifacts.

Direct vs. Indirect Measures. Methods of measuring student learning typically fall into two types: direct and indirect. Indirect measures are based on students' perception of their learning (e.g., surveys, exit interviews, focus groups), while direct measures are based on an observable demonstration of an acquired knowledge and/or skills (e.g., student performance on a quiz/test/exam, final research paper, oral presentation, thesis/dissertation and defense, and more). Although indirect methods of measuring student knowledge and skills are acceptable as additional sources of evidence of learning, direct measures must be the primary assessment method (Calderon, 2013; Price & Randall, 2008).

Embedded vs. Add-On Assignments. Simply put, embedded assignments are those that have "double duty" – they are assigned and graded by instructors as a natural part of the teaching-learning process, and they can also be used for assessment of SLOs. Student performance on embedded assignments is typically a component of the final course grade. Because "*students spend their learning time and energies on what they will be graded on*" (Suskie, 2018, p. 69), using embedded assignments helps ensure that students will try to do well on them which should result in obtaining more reliable evidence of their learning.

By contrast, add-on assignments are separate, ungraded assignments that students are asked to complete in addition to the required coursework for program evaluation purposes only. Add-on assignments often include standardized tests and surveys. The main challenge with add-on assignments is to motivate students to participate and to give those tasks their best effort.

Assessing Cognitive vs. Affective Domain. The concepts of direct vs. indirect measures and embedded vs. add-on assignments can also be looked at through the lens of assessment in the cognitive vs. the affective domains. Both domains stem from Bloom's Taxonomy, but what is most often being developed and assessed by educators are the learning outcomes in the cognitive domain; its depth of learning levels include knowledge, comprehension, application, analysis, evaluation, and creation. Cognitive learning outcomes are readily assessed using direct measures such as quizzes, tests, essays, and presentations.

Outcomes in the affective domain, however, are not as easily assessed. This is because the affective domain deals with the emotional realm that includes feelings, values, dispositions, motivations, attitudes, etc. The hierarchy of learning in the affective domain includes receiving phenomena, responding to phenomena, valuing, organizing, and internalizing. While the lower levels of the affective domain can be observed directly, for example, when a student is seen attentively listening to others or asking questions and eagerly participating in class discussions, the higher levels of learning cannot be assessed directly (unless we conduct some sort of a brain imaging study examining if certain values and attitudes have been internalized by the participant).

However, even though direct evidence of higher levels of learning in the affective domain cannot be obtained in an instructional setting, we can collect enough convincing indirect evidence to make an inferential leap that internalization of values and attitudes took place. Assuming the course (and the entire curriculum) exposes students to learning experiences aimed at affective learning outcomes, assessment can be based on triangulating information sources:

1. Direct evidence of lower levels of affective learning: for example, multiple-choice test items asking students to select the best definition for ethical behavior or to make a judgment about in which of the presented scenarios a person exercised cultural sensitivity.

2. Indirect evidence of higher levels of affective learning from students themselves: for example, asking students to write a reflection essay where they appraise their own belief in the democratic process and then have the instructors score those papers using a rubric with a developmental rating scale.

3. Indirect evidence of higher levels of affective learning from others: for example, using a group project where students are set up to demonstrate behaviors that are observable manifestations of target affective outcomes like self-reliance or teamwork and then asking group mates to rate each other on those behaviors.

Closed-Ended vs. Open-Ended Questions. When students' cognitive learning outcomes are assessed using questions on a test/quiz/exam, the types of questions need to be carefully selected to best position the students to demonstrate the kind of knowledge/skill and the depth of learning that match the target SLO. For example, student's knowledge and understanding of the basic discipline concepts and definitions may be best tested using closed-ended item format such as true-or-false, matching, and classic multiple-choice. On the other hand, student's ability to apply knowledge to solve problems in real-world scenarios or to analyze the validity of an argument may be best measured using constructed-response (aka open-ended) format like fill-in-the-blank, short-response and long-response/essay item types (Martinez, 1999).

Assessing One SLO Using Partial vs. Single vs. Multiple Assignments. Assessment of a learning outcome may require collecting information about student performance on different assignments and/or portion(s) of assignment(s).

- The most straightforward approach to assessing learning goals is to use one assignment to assess one SLO (**1-to-1 alignment**). When this approach is chosen, the instructor needs to make sure that the assignment only measures the knowledge or the skill that it is intended to measure (content validity). For instance, a final exam with 25 multiple-choice questions – all of which only cover main discipline theories and concepts – is an appropriate instrument to assess an SLO on knowledge of disciplinary fundamentals.

- To obtain a more 'stable', accurate indicator of how well students mastered given content or skill, instructors can use multiple assignments (**1-to-many alignment**). For example, an instructor may assess a critical thinking SLO using the total number of points a student received on three discussion board posts, or an average grade student received on multiple essays, or average points for long-response section from a midterm and a long-response section from a final exam. Similarly, an SLO might be assessed using multiple iterations of an assignment with instructor-provided feedback and student resubmittal.

- Finally, assessment of a learning outcome doesn't need to be based on an entire assignment; sometimes using a specific part of a larger assignment is more appropriate and sufficient (**1-to-part alignment**). For instance, if there are 50 total questions on a final exam covering multiple different content areas but only one or two of those content areas fall under the target SLO, then the instructor should only use (and record for SLO assessment purposes) student responses to the exam items that specifically test knowledge of those content areas.

Assessing Multiple SLOs with a Single Assignment. In many cases, a more meaningful and efficient assessment of multiple SLOs is possible using a single large-scale culminating experience. Examples of such experiences are capstone projects (e.g., research paper, senior design project, art exhibition), field experiences (e.g., internship, practicum, service learning), and graduate-level work (e.g., thesis, dissertation, their oral defenses, comprehensive exam).

Culminating experiences typically occur closer to the end of students' degree/certificate program which allows them to be best positioned to demonstrate mastery of the learning outcomes that their entire program of studies was designed to develop.

- **Capstone projects** are holistic activities that occur near the end of a learning experience (Suskie, 2018, p. 68). Whether a senior project, research paper, performance, or exhibition, capstone projects are ideal for assessing a host of knowledge, skills, and values/attitudes using a single assignment. For example, a well-designed capstone project for a Bachelor's in Engineering program has the potential to efficiently assess a multitude of SLOs: student's knowledge of engineering principles, ability to use computer-aided tools, to analyze and synthesize findings, to apply ethical reasoning, to produce technical writing, and to present a final product. Additionally, capstones often allow assessments of outcomes of real-world nature such as dynamic collaboration and complex problem-solving. The integrative and culminating nature of capstone projects can make them the centerpiece of a program's assessment plan.

- For interdisciplinary and self-designed programs where common curriculum experiences may be lacking, assessment of program SLOs may be best achieved using a portfolio of student work. **Portfolios** are a collection of completed assignments, often from across multiple courses, meant to represent a broad range of knowledge and skills acquired by the student throughout their studies in the program. Students are frequently allowed to self-select the work they feel best represents their growth and abilities. Portfolios are often complied into a single submission and assessed using a single rubric, giving them many of the benefits of a capstone project. Alternatively, components of the portfolio can be assessed at intervals by various instructors and in the context of different courses (Suskie, 2018, pp. 236-243).

  Portfolios have been common in fine arts and design programs for many years. Clearly, in these programs, the need to demonstrate a progression of skills visually is paramount. However, portfolios can be used across the disciplines. An example of a common use of portfolios is in teacher education. Students in these programs build a portfolio comprised of lesson plans, a philosophy of teaching statement, classroom management plans, photos of implemented lessons, and other evidence of demonstrated performance.

- Another culminating experience that offers the potential to assess multiple SLOs is an **internship or practicum**. In these experiences, students work with professionals in their field of study. Field supervisors can be asked to fill out a prepared rubric detailing specific behaviors to observe in the student's performance. These completed rubrics can be used for assessing multiple SLOs, especially those related to professionalism and career-ready competencies (e.g., teamwork, leadership).

The National Institute for Learning Outcomes Assessment (NILOA) made publicly available an extensive library of assignments authored by faculty from a wide range of academic disciplines. The NILOA Assignment Library contains hundreds of peer-reviewed assignments such as exams, research papers, case studies, presentations, portfolios, capstone projects; all of them are organized by discipline, degree level, and specific proficiencies to be assessed.

Step 8: Developing and Applying Rubrics

To better distinguish and assess several SLOs demonstrated by students in a single assignment, programs should use rubrics that have multiple evaluation criteria and achievement levels. In addition to assessing attainment of the SLOs, rubrics can also be used for determining the students' grade on the assignment, thus allowing them to serve multiple purposes and providing an excellent return on investment of the initial time required to develop them.

A rubric is a scoring tool designed to assess multifaceted observable performance by a student on a single assignment using a set of predetermined expectations. "*Rubrics divide an assignment into its component parts and provide a detailed description of what constitutes acceptable or unacceptable levels of performance for each of those parts. Rubrics can be used for grading a large variety of assignments and tasks: research papers, book critiques, discussion participation, laboratory reports, portfolios, group work, oral presentations, and more*." (Stevens & Levi, 2012, p. 1).

There are several types of rubrics that can be used to evaluate student learning. Progressing from the simplest to the most complex, they are checklists, rating scales, holistic, and analytic rubrics. Each has their place as an assessment tool. The first three types of rubrics are described in Appendix E. The gold standard of rubrics is the **analytic** rubric.

Analytic rubrics list criteria as rows and performance levels as columns, and each intersecting cell contains a succinct but explicit description of what a certain performance level on a certain criterion looks like. Analytic rubrics are the best way to assess student's large-scale culminating work like a capstone design project, an internship, or a theatrical play. Because these experiences allow students to demonstrate many different sets of content knowledge, skills, and dispositions, applying an analytic rubric to a single assignment to expediently assess level of performance on each of these learning outcomes separately is ideal.

At the graduate level, analytic rubrics are indispensable. Many graduate programs choose a master's thesis/doctoral dissertation to evaluate whether the students have developed important graduate-level competencies, such as ability to analyze and synthesize prior literature, to apply and interpret statistical tests, or to compose clear, well-constructed, error-free scientific prose. Using a rubric provides students, major professors, and defense committees with a clear, shared understanding of what specific facets of a thesis/dissertation will be assessed and how. Simply using the overall

thesis/dissertation 'pass or fail' approach to assessment of SLOs does not allow for an evaluation of different, specific knowledge sets, skills, and values/attitudes required by a thesis/dissertation. Below is an example of a dissertation analytic rubric that can be filled out by the major professor or by each member of the dissertation defense committee separately. In either case, aggregated ratings from all dissertation defenses in a given year can be used to assess program-level effectiveness in preparing students to demonstrate SLOs.

Criteria	High Pass (3 points)	Pass (2 points)	Low Pass (1 point)	Fail (0 points)	TOTAL
Doctoral Program SLO #1: Review and Synthesis of Literature					**5**
Student demonstrates ability to describe clearly a well-conceptualized problem	Demonstrates excellent ability to describe and conceptualize research problems	Demonstrates good ability to describe and conceptualize research problems	Demonstrates fair ability to describe and conceptualize research problems	Demonstrates no or little ability to describe and conceptualize research problems	2
Student integrates and critiques relevant literature	Demonstrates excellent ability integrate and critique literature	Demonstrates good ability integrate and critique literature	Demonstrates fair ability integrate and critique literature	Demonstrates no or little ability integrate and critique literature	3
Doctoral Program SLO #2: Application of Research Methods and Interpretation of Findings					**5**
Student uses appropriate research approaches and methods	Excellent use of research approaches and methods	Good use of research approaches and methods	Fair use of research approaches and methods	No or little use of research approaches and methods	2
Student presents justified and defensible conclusions	Excellent justification and defense of conclusions	Good justification and defense of conclusions	Fair justification and defense of conclusions	No or little justification and defense of conclusions	3
Doctoral Program SLO #3: Oral and Written Communication					**4**
Student orally presents and defends problem, objectives, approach, and conclusions of dissertation	Demonstrates excellent ability to present and defend the dissertation research	Demonstrates good ability to present and defend the dissertation research	Demonstrates fair ability to present and defend the dissertation research	Demonstrates no or little ability to present and defend the dissertation research	2
Student's writing is clear, organized and of professional quality	Demonstrates excellent ability to write clearly and convincingly at professional level	Demonstrates good ability to write clearly and convincingly at professional level	Demonstrates fair ability to write clearly and convincingly at professional level	Demonstrates no or little ability to write clearly and convincingly at professional level	2
TOTAL	**14 out of 18 points possible**				
AVERAGE	**2.33 out of 3 points possible**				

Developing a rubric, an analytic one in particular, takes time and may require iterative drafts and collaboration, especially if multiple instructors plan to use it. Nevertheless, the benefits of using rubrics in assessment of learning far outweigh the initial investment of time and effort. Well-crafted rubrics can help students better understand instructor's

expectations, especially in complex assignments and for students who come from under-resourced backgrounds. Rubrics can also help provide meaningful, detailed, speedy feedback to students without the time required for extensive individual comments. Finally, using rubrics can help prevent bias and inconsistencies from creeping into instructor scoring of student work.

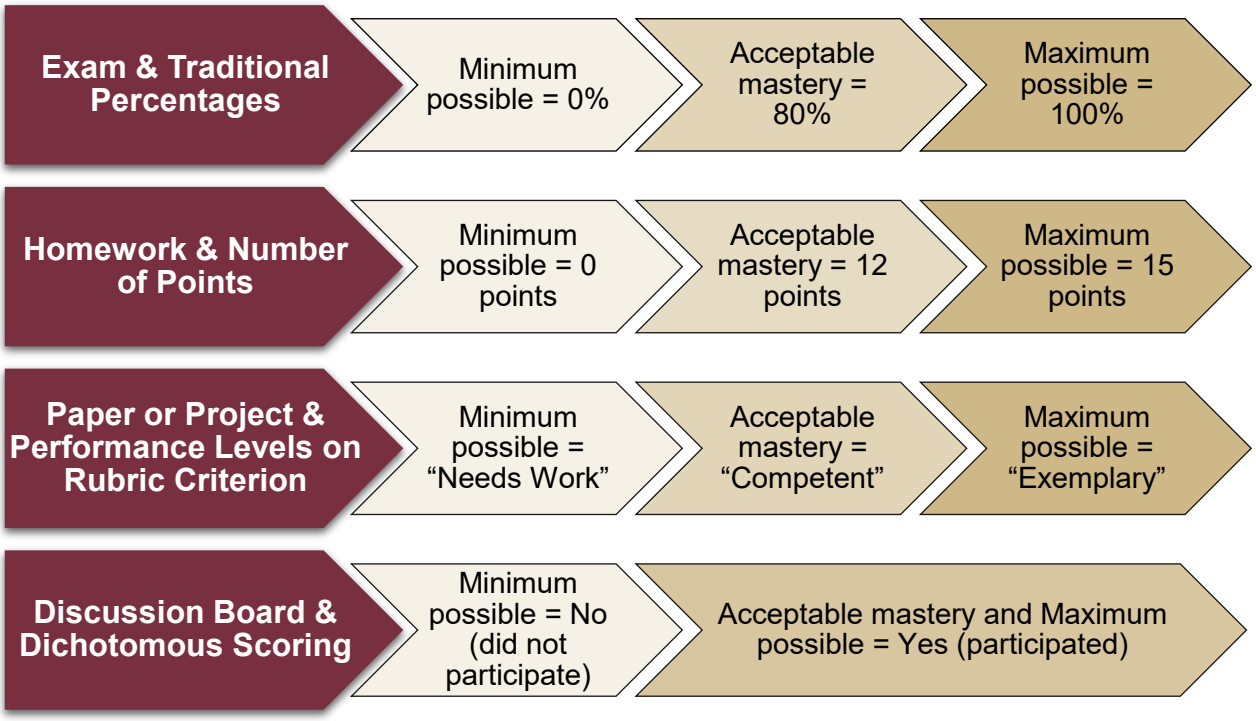
A great source for rubrics is the Association of American Colleges and Universities' (AAC&U) Valid Assessment of Learning in Undergraduate Education (VALUE) project. "*Teams of faculty and other educational professionals from institutions across the country… developed rubrics for sixteen Essential Learning Outcomes that all students need for success in work, citizenship, and life*." The VALUE rubrics help assess various SLOs such as critical thinking, inquiry and analysis, written communication, oral communication, quantitative literacy, problem solving, and teamwork. The VALUE rubrics are free and available for download from AAC&U's website.

In addition, our peer institutions' assessment teams have made publicly available a host of rubric-related supporting resources. The University of North Carolina at Chapel Hill provides an excellent guide with examples on how to use rubrics to assess SLOs. The University of Hawai'i at Manoa has an extensive rubric bank and details best practices in creating and using rubrics to assess student learning. The FSU IPA Office collected and made available for download rubrics of different types and for different disciplines (humanities, visual arts, STEM, social sciences) and degree levels (Bachelor's, Master's, Doctorate). These rubrics may be adjusted in any way to meet the needs of specific assignments and learning outcomes. IPA staff members are available by request to facilitate a rubric crafting session and/or review rubrics used for program-level assessment.

Step 9: Setting the Standard for Success

One of the last decisions that needs to be made in planning the SLO assessment approach is establishing a measurable, quantifiable standard that defines success in attainment of an educational outcome. This step is two-part: faculty need to determine what constitutes a minimally acceptable level of SLO achievement and a minimally acceptable proportion of students demonstrating that level of achievement. The question guiding the selection process is "*In order for you to deem your educational program effective in helping students achieve the learning outcome, what proportion of them need to demonstrate performance at what level?*".

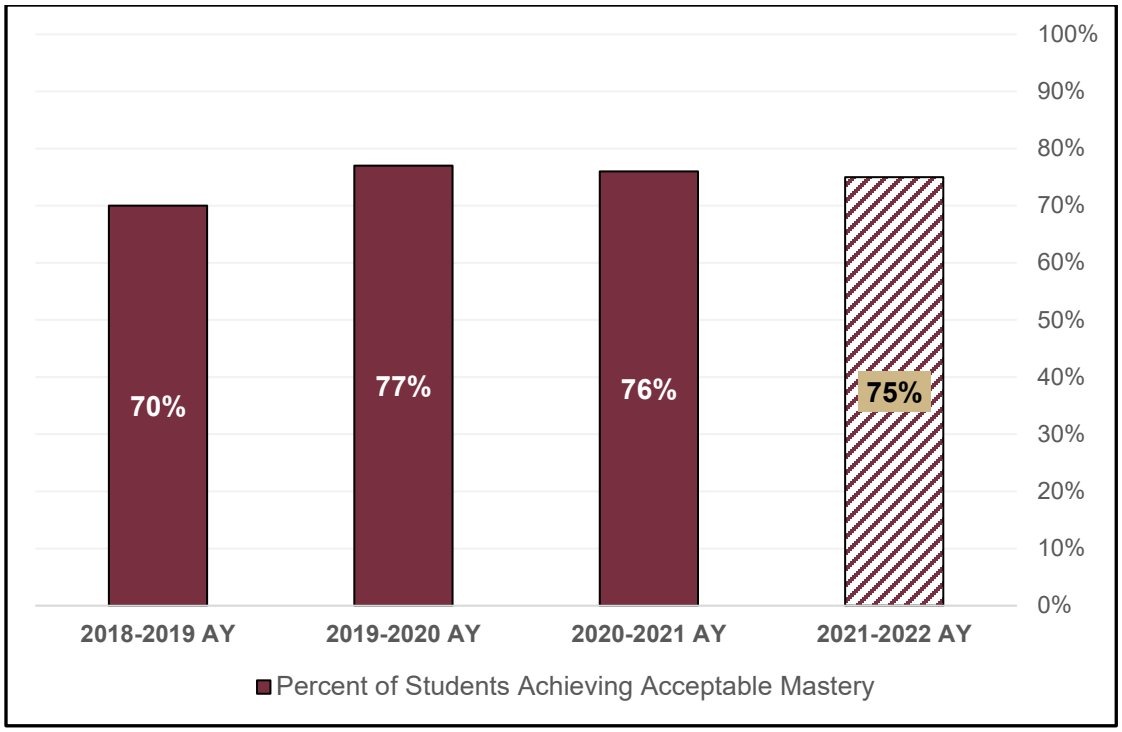
Typically, the instructional faculty first determine what level of demonstrated knowledge or skill should be considered satisfactory for a student graduating from the program. This 'good-enough' level of student performance on the chosen measure of learning is referred to as **the acceptable level of mastery**. This level can be established depending on the type of the assignment and its scoring range. Some popular configurations are listed below.



The second component of a well-defined standard for success is **the threshold of acceptability**, which is the minimum proportion of students who must attain the acceptable mastery level on the chosen measure of learning for the SLO to be considered successfully achieved by the students in the program. The threshold of acceptability may be expressed as "*at least 85% of students will*…", "*at least 80% of majors will*…", "*at least 75% of graduates will*…", etc.

The best way to determine where to set the threshold is to study students' past performance on the same/similar SLO or on the same/similar assessment tool. Faculty expectations for the proportion of current students in the program who should achieve the acceptable level of mastery should be informed by the historical trend data showing how well students in previous cohorts demonstrated learning.

As illustrated in the bar graph below, based on the percentage of students who achieved acceptable mastery in academic years 2018-2019, 2019-2020 and 2020-2021, faculty can reasonably expect that about 75% of students who will be assessed in the upcoming 2021-2022 academic year will do the same. This prediction, of course, assumes that student characteristics remain similar, assessment tools are the same, and that no significant changes to student learning experiences have been implemented.



Before the final standard for learning success is set, there are several practical and philosophical dilemmas that may need to be considered (Suskie, 2018, pp. 297-303).

How rigorous should the standard for success be?	
If you want to identify areas for improvement and ensure that students are competent when they complete a course, set a relatively high bar so you increase your chances of accurately identifying what needs to be changed and/or ascertaining students are indeed competent.	"*If you want to maintain the status quo and avoid extra work, set a relatively low bar so your program or college looks successful and doesn't need any changes*."
For basic, essential, or vital learning goals (especially those focused on health and safety), aim for almost all students to achieve high level of mastery.	For aspirational or non-essential learning goals, aim for about two thirds of students achieving some level of mastery.
If using the minimally acceptable performance approach is not satisfactory, consider setting a compound standard for success. "*You might set a target that 90% of your students meet your minimally adequate standard and a second target that at least 30% meet your exemplary standard*."	Using a traditional standard for success approach (e.g., "*At least 80% of students will score 80% or better on the final exam*") is perfectly fine and widely practiced.

Step 10: Designing the Assessment Process

In order to inform teaching and learning practices in a meaningful way, the SLO assessment process should be methodologically sound, valid, and preferably executed in a consistent fashion from year to year. At the same time, assessment should be sustainable long-term and manageable during the 'crunch time', which usually falls on the start of the academic year. This chapter describes how to best design and describe the few remaining aspects of the overall assessment methodology so that the entire process is thoughtful and comprehensive, yet straightforward and clear.

When? The answer to the question of when to gather evidence of student learning depends on the courses and learning experiences chosen for assessment of SLOs.

- If a given SLO is based on student learning data that comes from a course only taught in Fall and Spring, then Summer does not need to be included.

- If data for a given SLO assessment comes from a course taught in all three semesters, it is up to the instructors to decide whether they want to include Summer terms. Usually, this decision is based on the size of student enrollment. If there are comparatively few students enrolled in Summer A, B and/or C courses, these terms may be omitted. In this case, the rationale for exclusion can be provided in the IE Portal. Sample statement: "*This SLO is assessed based on student learning data obtained in course X. Although this course is taught throughout the academic year, over 90% of students take it in Fall and Spring. To expedite the data collection process without losing significant amount of student scores data, we decided to not include data from the Summer terms*."

- If there is sizable student enrollment in summer course(s) used in SLO assessment and/or if program faculty prefer to include all student learning data in outcomes analysis, instructors need to come to agreement whether the leading or the trailing Summer is included in the definition of the academic year (Summer, Fall, Spring vs. Fall, Spring, Summer). IPA recommends basing this choice on the timeline for SLO data aggregation and analysis: educational programs that study learning outcomes data in May should use 'Summer, Fall, Spring' approach, and educational programs that collect and analyze SLO data in August/September, should define their academic year for assessment purposes as 'Fall, Spring, Summer'.

Where? The answer to the question of where exactly in the program curriculum is the best place to gather evidence of student learning outcomes depends on where the students have the best opportunity to demonstrate that they have successfully acquired the target set of content knowledge and skills. As described in Step 6: Aligning SLOs and Curriculum, after students have (almost) completed courses where various SLOs are introduced, reinforced/practiced, and mastered, they are best positioned to participate in assessment of learning outcomes.

- Generally, in undergraduate programs, 3000- and 4000-level courses are better suited for SLO assessment than 1000- and 2000-level courses because gathering evidence of learning in more advanced courses allows students to be assessed after they have progressed through several semesters worth of learning experiences designed to help them develop knowledge and skills.

- Conducting assessments closer to the end of a course is typically better than doing so in the first half of the course or at multiple points throughout the course. This recommendation is especially applicable to courses where a given SLO is intended to advance through all three stages of development – to be introduced, practiced/reinforced, and mastered (e.g., in an introductory theory course or a research methods course).

Who? The nature of the SLO should inform the decision about who assesses it. Whereas content knowledge and skills are most readily and appropriately assessed by instructors, performance-based outcomes might be best assessed by field experience supervisors, interpersonal skills may be best assessed by peers, and values and attitudes can be assessed by the individual student themselves.

- Many programs require students to participate in an internship, practicum, or a clinical experience. The field supervisors of these experiences are well-positioned to assess SLOs related to application of knowledge and skills, professionalism, and career readiness. While the supervisors have the best opportunity to directly observe the desired outcomes, it is advisable to provide them with an analytic rubric describing performance criteria and achievement levels so that supervisors have a clearer understanding of the expectations that program faculty have for their students.

- Another approach to who conducts assessment is to have thesis/dissertation committee members evaluate learning outcomes demonstrated by the candidate in their written paper and during its oral defense and presentation. Here again, a rubric can be instrumental in allowing committee members to evaluate multiple student outcomes efficiently and reliably. The scores on each rubric criterion can be averaged or summed across all committee members to arrive at an overall assessment score for each separate set of knowledge and skills demonstrated by the student. The FSU IPA Office aggregated several rubrics designed specifically for assessment of SLOs using theses/dissertations.

- Providing students opportunities to evaluate peers can support assessment as well as enrich the learning process. Classmates can evaluate one another on individual or group assignments and projects, particularly when given a well-developed, analytic rubric. Using peer evaluation allows for assessment of skills that instructors may not be able to observe firsthand, such as leadership and collaboration. Additionally, peer evaluation allows those performing the assessment to enhance critical thinking skills and gain insights into their own performance (Suskie, 2018, pp. 169-170).

- For the affective learning outcomes, self-evaluation is often the most appropriate approach. For example, students' values and attitudes may be assessed through a self-rating scale or a reflective essay. The latter provides an important qualitative piece to assessment and imbues otherwise 'dry' data with a human element. Furthermore, these kinds of self-assessment practices allow students to engage in important higher order thinking skills – synthesis and metacognition (Suskie, 2018, p. 260-266).

Whom? The answer to the question of whom to assess depends on the program's sense of ownership over student learning and on the right amount of assessment data needed to inform decisions about teaching and learning processes.

- It is ultimately up to each educational program to decide which students are included in assessment of SLOs – all students who take the course where SLO is assessed vs. only majors (i.e., students in a major/minor/concentration track that falls under the degree program). However, because the goal of assessment is to improve educational programs, accrediting/professional organizations recommend to only include students who 'belong' to the said program and will be graduating with the respective credential. In other words, even though 'non-majors' may be taking courses where SLO assessment takes place, their data should be excluded from the learning outcomes dataset and analysis. There are two main ways to access information about the major/minor/concentration track of students enrolled in programs, courses, and course sections:

    - **Independently**: First, a departmental representative will need to request access to the Student Academic Plan Summary dashboard in the FSU Oracle Business Intelligence (OBI) platform, and have it approved by their supervisor. After that, the user will need to login to my.fsu.edu. and use the dashboard to extract data on students enrolled in each academic plan in the current term.

    - **With institutional support**: The Office of IPA will provide departments with a by-term list of students who belong to target majors and degree or certificate programs. The Office of Institutional Research (IR) at FSU will also be able to assist with data requests of this type.

- While assessing the entire student population is ideal, and even necessary in smaller programs, for larger programs, not every student in every course section needs to be assessed every year. While this is not to say that instructors can pick and choose whom they would like to assess, thoughtful, representative sampling or staggering may be appropriate.

    - For instance, in courses with large number of sections and/or large enrollment, including a random sample of students or course sections may be sufficient. If it's more appropriate, programs can choose a different sampling approach, such as stratified, systemic, or cluster sampling.

- In cases when lengthy, complex artifacts (e.g., portfolios or research papers) are assessed with an analytic rubric, a sample of submitted student work can be used. A good rule of thumb for large programs is to sample 10-20% of students.

- For programs with many SLOs, their assessment can be staggered (i.e., conducted in alternating years). For example, SLOs #1, #2, #3 and #4 can be assessed in odd years, and SLOs #5, #6, #7 and #8 – in even years. This method may be most suitable for programs with history of high achievement of learning outcomes and/or for programs with limited assessment personnel and resources.

How? Another, very important, aspect of designing a strong assessment methodology is to avoid using final course grades to assess SLOs. Using final course letter grades and/or final overall points does not allow for distinguishing how well the student learnt different, separate sets of content, skills, and values/attitudes. Furthermore, not only are final course grades based on student demonstration of multiple different knowledge and skill sets, but they also often include non-academic elements, such as class participation and attendance/tardiness. In addition, course final grades may be curved, which makes them even less accurate in gauging student learning outcomes. (See pages 10-11 in Suskie, 2009 for further discussion on this topic.)

The table below illustrates how one student who better mastered course content nonetheless received a lower overall grade because they did not receive points for consistent attendance. Even if the instructor excludes attendance from the final grade calculation, it would still be impossible to discern if two students who received As have learnt the same content/skills to the same level of mastery. Maybe Student A correctly answered all midterm and final exam questions on disciplinary models and theories definitions but struggled with questions on how these models and theories apply to real-world scenarios, while Student B demonstrated higher mastery of the application skills but was confusing some definitions and terms that required memorization.

Assignment	Weight	Student A	Student B
Attendance	10%	100	0
History Quiz	15%	90	92
Homework	15%	90	96
Midterm	30%	89	98
Final Exam	30%	88	100
TOTAL POINTS		90.1	87.6
COURSE GRADE		A	B

Step 11: Describing the Assessment Plan

When documenting the Assessment Plan in the IE Portal, it may be helpful to refer to the examples below.

Bachelor's Program:

- **SLO Name:** SLO – Application and Interpretation of Statistical Tests.

- **SLO Statement:** Upon completion of Research Methods in Psychology (PSY 3213C), the students will choose the appropriate statistical analysis for a particular research design and interpret the results of common statistical tests.

- **SLO Assessment Plan:** We will assess this outcome by testing students in all sections of PSY 3213C (Research Methods in Psychology) offered during the academic year (Fall and Spring). This is the core research methodology course for students who major in Psychology. To assess this learning outcome, we will use a final exam that was written and is curated by our program faculty. The entire final exam consists of 50 multiple-choice questions. 15 of these questions will be used to assess student's 'Application and Interpretation of Statistical Tests' for this outcome.

- **SLO Numeric Target:** By the end of the Research Methods in Psychology course (PSY 3213C), at least 75% of students majoring in Psychology will achieve mastery on the SLO by correctly answering at least 10 out of the 15 (67%) final exam questions testing this learning outcome.

Master's Program:

- **SLO Name:** SLO – Critical Thinking.

- **SLO Statement:** Upon completion of the program, students will objectively analyze and evaluate an issue and form a judgment supported by evidence.

- **SLO Assessment Plan:** At the end of their program, master's students either write and defend a thesis (thesis-track) or prepare for and take a comprehensive exam (non-thesis track).

  For the thesis-track students, a committee of three faculty members evaluate student's critical thinking skills using a rubric. The rubric has 3 criteria, each corresponding to a separate SLO: SLO #1 Knowledge of Theory and Content, SLO #2 Methods and Applications, and SLO #3 Critical Thinking Skills. All criteria/SLOs are evaluated based on a 4-point scale: 1-Emerging, 2-Developing, 3-Proficient, 4-Advanced. At the end of each defense, committee members fill out the PDF rubric electronically and email it to the Graduate Program Director. The

Director aggregates the results and shares them at the faculty meeting in August. Faculty members discuss the results and decide on any necessary changes to how the critical thinking skills are taught and assessed. The rubric is attached.

	1-Emerging	2-Developing	3-Proficient	4-Advanced	Your Evaluation
SLO #1: Knowledge of Theory and Content	Demonstrates limited understanding of key concepts and theories.	Demonstrates basic understanding of key concepts and theories but may have some misconceptions.	Demonstrates good understanding of key concepts and theories, with few misconceptions.	Demonstrates excellent understanding of key concepts and theories, with no misconceptions.	
SLO #2: Methods and Applications	Demonstrates limited ability to apply methods and techniques to solve problems.	Demonstrates basic ability to apply methods and techniques to solve problems but may struggle with more complex problems.	Demonstrates good ability to apply methods and techniques to solve problems, including more complex problems.	Demonstrates excellent ability to apply methods and techniques to solve problems, including the most complex problems.	
SLO #3: Critical Thinking Skills	Demonstrates limited ability to analyze and evaluate information and form judgments.	Demonstrates basic ability to analyze and evaluate information, and form judgments, but may struggle with more complex issues.	Demonstrates good ability to analyze and evaluate information, and form judgments, including on more complex issues.	Demonstrates excellent ability to analyze and evaluate information, and form judgments, including on the most complex issues.	
				TOTAL:	

For the non-thesis-track students, departmental faculty designed a comprehensive exam that has 10 questions in the long-answer format. SLO #1 Knowledge of Theory and Content is assessed using questions 1-4, SLO #2 Methods and Applications is assessed using questions 5-7, and SLO #3 Critical Thinking Skills is assessed using questions 8-10. Each question is worth 10 points. The Director of Graduate Studies aggregates the results and shares them at the faculty meeting in August. Faculty members discuss the results and decide on any necessary changes to how the critical thinking skills are taught and assessed.

- **SLO Numeric Target:** For the thesis-track group, at least 80% of students will achieve level of 3-Proficient or 4-Advanced on the Critical Thinking rubric criterion from all committee members. For the non-thesis-track group, at least 80% of students will score 20 points or higher (out of possible 30 points) on comprehensive exam questions 8, 9 and 10 (66%).

Doctoral Program:

- **SLO Name:** SLO – Oral and Written Communication.

- **SLO Statement:** Upon completion of the program, the students will effectively and clearly communicate their ideas and arguments through both oral and written forms of communication.

- **SLO Assessment Plan:** Doctoral students produce and defend a dissertation. A committee of four professors and one external member evaluate student's oral and written communication skills according to a rubric.

  The rubric has 6 criteria that are used to assess 3 different SLOs: SLO #1 Review and Synthesis of Literature, SLO #2 Application of Research Methods and Interpretation of Findings, and SLO #3 Oral and Written Communication. SLO #3 is evaluated using the last two criteria in the rubric: "Student orally presents and defends problem, objectives, approach, and conclusions of dissertation" and "Student's writing is clear, organized and of professional quality". Both criteria are evaluated based on a 4-point scale: High Pass (3 Points), Pass (2 Points), Low Pass (1 Point), Fail (0 Points).

  Shortly after each dissertation defense, committee members will receive a link to the dissertation evaluation form and will be asked to complete it. The link to the form is here. At the end of each academic year (Summer, Fall, Spring), the Graduate Program Director will aggregate the assessment data and will present the report at the Graduate Committee meeting in August for further analysis and consideration of appropriate changes to support student learning.

- **SLO Numeric Target:** At least 80% of students will achieve level of 'High Pass' (3 points) or 'Pass' (2 points) on both rubric criteria under the Communication SLO from most committee members.

Step 12: Recording and Collecting Learning Data

FSU offers the Canvas Learning Management System to help instructors create lessons and assignments and assess learning in face-to-face and online courses. When outcomes assessment is embedded in the course design, SLO data may be recorded in, and later retrieved from, the Canvas course site Gradebook or the Learning Mastery Gradebook associated with the Canvas Outcomes feature. The Office of IPA recommends using Canvas to record student performance on all program-level learning outcomes. The following resources offered by the FSU ODL are excellent starting points for faculty wishing to streamline the SLO assessment process in their courses. ODL's help in setting up the Canvas Outcomes, Canvas Gradebook, or Canvas New Quizzes can be requested at: https://odl.fsu.edu/form/training-consultations

- **Canvas Outcomes feature:** ODL can help programs and departments embed SLO assessment in Canvas assignments, quizzes, or rubrics, which makes learning data collection process easier, even across sections and instructors. In addition to working with ODL, please also reach out to the Office of IPA at ipa@fsu.edu to ensure that the Canvas Outcomes feature is set up in such a way that would allow for subsequent SLO assessment. Educational programs may also independently review and implement the Canvas Outcomes feature using the guides to create the Outcomes and import the Outcomes.

- **Canvas Gradebook 101:** This webinar focuses on how to set up Canvas Gradebook to support course's grading and assessment needs, including grade column creation, grade weighting, and ensuring Canvas grading scheme matches what's in the course syllabus. Instructors who are familiar with the Canvas Gradebook may use this quick guide to set up an unweighted grade column to document student scores on SLO(s) assessed in their courses.

- **Get Started with Canvas New Quizzes:** New Quizzes is Canvas's new assessment engine, which will replace the current "Classic" Quizzes over the next few years. New Quizzes provides assessment features such as new question types, shuffling of questions, robust auto-grading options, and more. This webinar introduces participants to New Quizzes' improvements and workflow changes.

As previously discussed, each educational program at FSU creates an assessment process most suitable to its size, existing leadership structures, aspirations, and culture. However, there are some general practical arrangements that departments and programs put in place to facilitate the assessment data collection and reporting process. Below are some of them:

- Designate an assessment coordinator for each educational program and include outcomes assessment in their Assignment of Responsibilities (AoR), thus giving them bandwidth, recognition, and responsibility associated with this important process. Generally, the assessment coordinator leads and manages the outcomes assessment process at the level of their educational program and/or academic department. Specific responsibilities typically include working with faculty to collect outcomes data, organizing the outcomes analysis and improvement discussion process, documenting outcomes reports in the IE Portal, and partnering with the Dean's Office and/or University central offices (IR, IPA, CAT, etc.) to facilitate assessment efforts and complete annual reporting.

- Once the academic unit jointly decides which specific courses, learning experiences, and assignments are best suited for SLO assessment, a data collection plan is established. Generally, department chairperson and/or assessment coordinator make sure faculty are familiar with their program-level SLOs and the established assessment cycle. Programs may have a preference for how faculty submit their assessment data each semester/year.

- **Option A**: Each instructor sends a file containing each student's score on the target assignment(s). Along with the file, they should also include their analysis of any trends in the data. An analysis should indicate parts of the assessment students appeared to struggle with, such as specific topics or questions, and which ones they appeared to learn well. A central program contact (chairperson, assessment coordinator, graduate studies director, etc.) aggregates the results into a program-level report. This is the preferred approach because (or, even though) it requires substantial faculty involvement.

- **Option B**: A central program representative is granted access to the Canvas courses in which SLO assessment takes place and retrieves necessary student learning data directly from the gradebooks. In this case, the representative needs to communicate with the instructors to establish which specific assignment(s) are used to assess the SLOs. The representative aggregates the results and shares them with faculty and/or department/program assessment committee for analysis and discussion. This approach requires less effort from individual faculty members, but it does not always result in nuanced analysis of SLO data.

- **Option C**: Office of IPA retrieves the necessary learning outcomes scores from the Canvas courses and prepares a Learning Analytics data report. The list of specific assignments used in SLO assessment is sent to IPA by the central program representative who works with faculty internally to collect this information. This approach is similar to the way FSU records, collects, aggregates, and shares data for assessment of SLOs in the general education curriculum. Please reach out to the IPA Office to discuss this option.

Step 13: Summarizing and Analyzing Learning Data

Regardless of which specific option for recording and collecting student learning data is used by individual instructors or groups of instructors, when it comes to summaries, analysis, and sharing of the SLO data and information, all program instructors may benefit from including the following elements (or equivalents) in their assessment presentations and/or reports:

1. A **detailed table** showing how each student responded to each part of the assignment,

2. A table and/or graph and/or bullet points providing **data summary**,

3. A table and/or graph and/or bullet points showing **learning data patterns**,

4. A narrative **analysis summary** that includes interpretation and contextualization of learning data.

Below are several scenarios that illustrate how learning data can be summarized, analyzed, and presented in the form of tables, graphs, and short narratives.

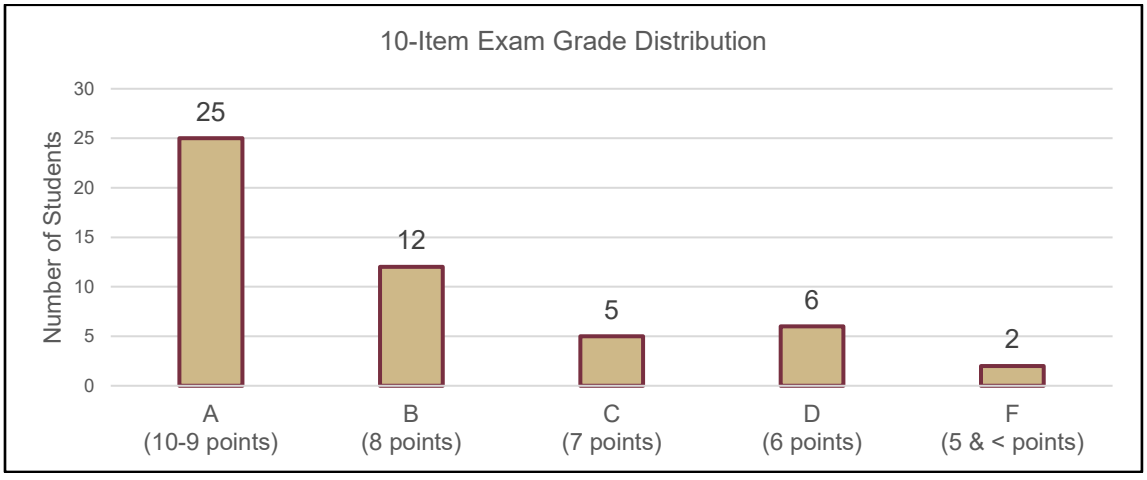
Scenario A: SLO Assessed Using Multiple-Choice Exam

FSU Art History Bachelor's program has 5 SLOs. SLO #2 is focused on art history content knowledge and is assessed using a course-embedded assignment. At the end of the Spring semester, the instructor teaching ARH 3473 *Intro to Modern and Contemporary Art* administers a 10-item exam testing students' knowledge of art historical study. Each exam question is worth 1 point. The numeric target for this outcome is that at least 70% of students participating in the assessment will score 8 points (B letter grade) or higher on the exam.

1. **Detailed Table:** In Spring 2022, 50 students contributed to assessment of SLO #2 by participating in the exam. The table in Appendix F shows the number of points received by each of the 50 students on each of the 10 exam questions. In addition, the table shows the total test points earned by each student, the total correct answers given to each exam question, and class average for the number of points and letter grades. Overall, students did well on the assignment because the class average was 8.2 points, which corresponds to an average B letter grade.

2. **Data Summary:** As shown in the table and graph below, 74% of students scored 8 points or higher on the exam, which is 4 percentage points higher than the 70% threshold of acceptability chosen for the 'Art History Content Knowledge' SLO. Thus, the numeric target for SLO #2 was met, and the program appears to be effective in teaching this content to students.

	A (10-9 points)	B (8 points)	C (7 points)	D (6 points)	F (5 & < points)
N Students	25	12	5	6	2
% Students	50%	24%	10%	12%	4%



3. **Data Patterns:** As shown in the table and graph below, most students demonstrated sufficiently high level of knowledge of most topics and concepts tested by the exam – all but two questions had somewhere from 39 to 45 students provide correct answers.

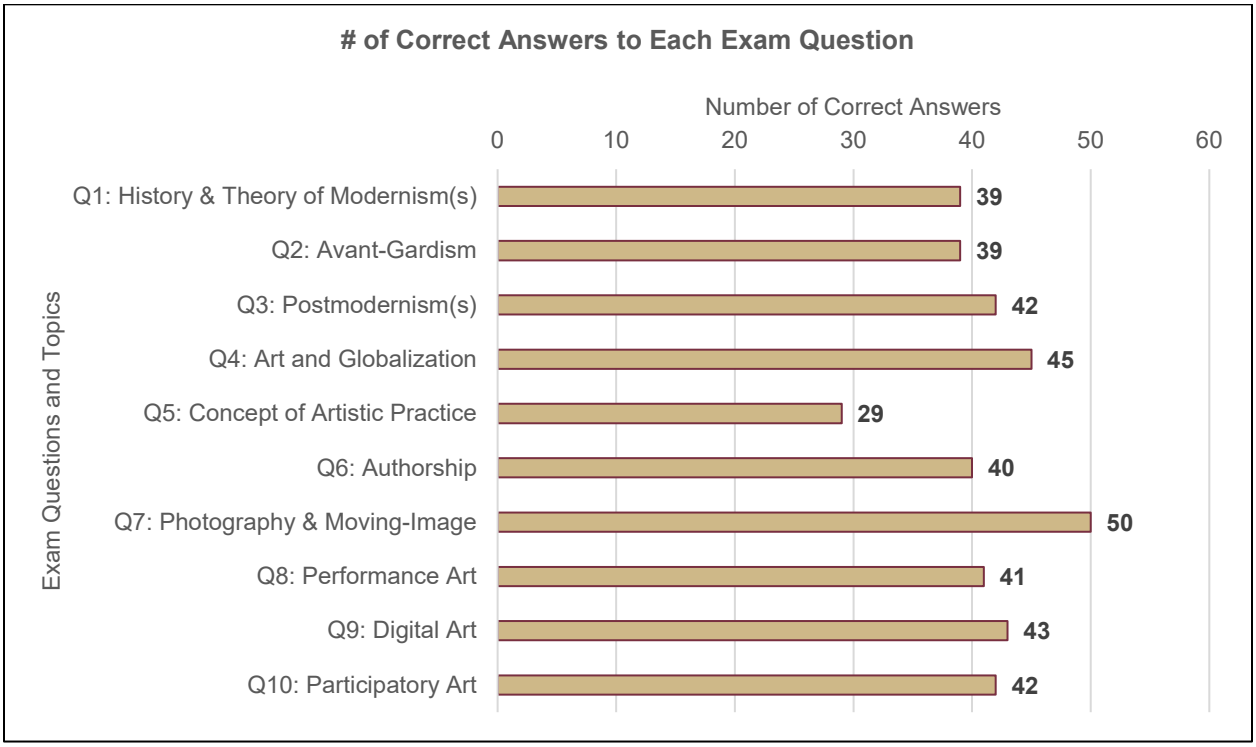
   Two exam questions had a different pattern of responses:

   - Question #7 'Photography and Moving Image' had all 50 students provide a correct answer, which is unusually high compared to other questions. The instructor took a closer look at the pattern on responses and noticed that even the student who had the lowest exam score out of everyone else, nonetheless answered Question #7 correctly.

   - Question #5 'Concept of Artistic Practice' had 29 students provide correct answers, which is substantially lower compared to other questions. The instructor took a closer look at the pattern on responses and noticed that:

     - Quite a few students who struggled with the overall exam (grades C, D and F) also did poorly on Question #5,

     - Several students who answered all other exam questions correctly only failed question #5 (students 17, 22, 28, and 40).



Q1: History & Theory of Modernism (s)	Q2: Avant-Gardism	Q3: Postmodernism(s)	Q4: Art and Globalization	Q5: Concept of Artistic Practice	Q6: Authorship	Q7: Photography & Moving-Image	Q8: Performance Art	Q9: Digital Art	Q10: Participatory Art
39	39	42	45	29	40	50	41	43	42

4. **Analysis Summary**: Having identified the two learning data patterns described above, the instructor critically reviewed the exam items, including the wording, answer options, quality of the distractors, and the test blueprint[2]. The instructor determined that:

    - Question 5 had low correct response rate because the concept of artistic practice was not given sufficient instruction time – all other topics tested in the exam had a full class period dedicated to each of them, while the concept of artistic practice was only explained in one reading assignment and covered in the last three slides of the bigger lecture on authorship,

    - Question 7 was answered correctly by all students because it included only one obviously wrong multiple-choice answer option, which made the question very easy.

Scenario B: SLO Assessed Using a Culminating Product and a Rubric

FSU 'Social Sciences' Doctoral program has 3 SLOs. SLO #3 is focused on oral and written communication skills and is assessed using an analytic rubric. The rubric has 6 criteria that are used to assess program-level learning goals: SLO #1 Review and Synthesis of Literature, SLO #2 Application of Research Methods and Interpretation of Findings, and SLO #3 Oral and Written Communication. SLO #3 is evaluated using the last two criteria in the rubric: "Student orally presents and defends problem, objectives, approach, and conclusions of dissertation" and "Student's writing is clear, organized and of professional quality". Both criteria are evaluated based on a 4-point scale: High Pass (3 Points), Pass (2 Points), Low Pass (1 Point), and Fail (0 Points). At the end of each dissertation defense, all committee members fill out the rubric and send the completed forms to the graduate studies director. The numeric target for the 'Oral and Written Communication' SLO is that at least 80% of students will achieve level of 'High Pass' (3 points) or 'Pass' (2 points) on both rubric criteria from most committee members.

1. **Detailed Table:** In academic year 2022-2023 (Summer, Fall, Spring), 5 doctoral students defended their dissertations. All 5 passed. The table below shows the number of points received by each student from the four committee members on

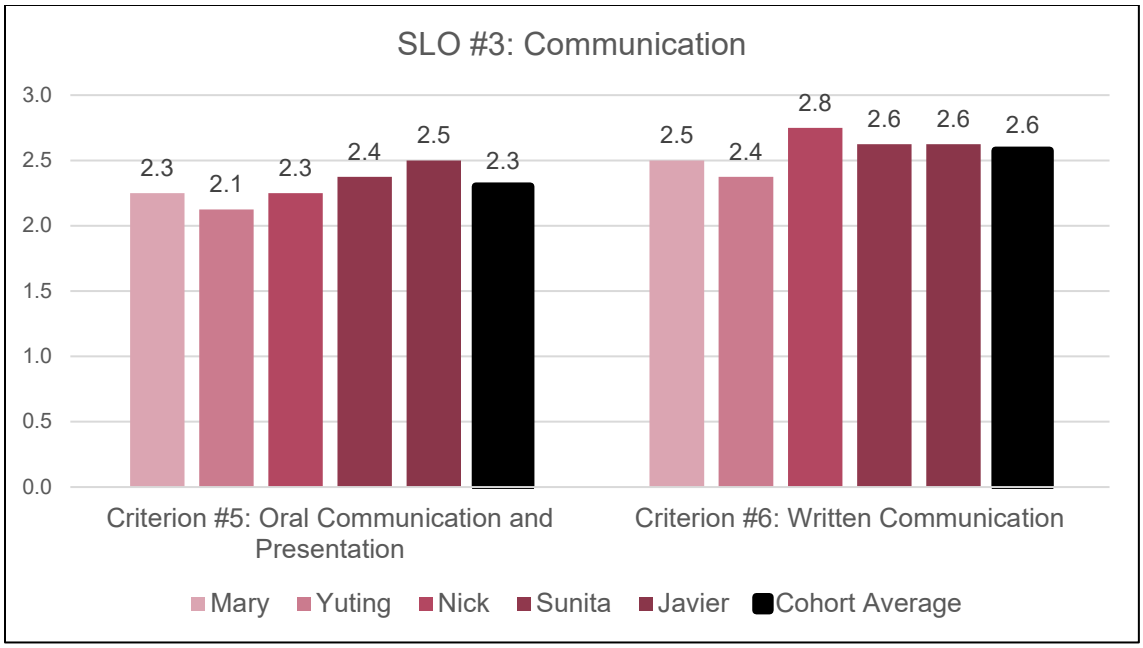
[2] A test blueprint, also known as a table of specifications, is a document that outlines the structure of an assessment by specifying the content areas that the test covers, and the number of test items and points allocated to each topic. It also guides the development of instructional materials and in- and out-of-class activities, by highlighting the content and skills that will be assessed. This helps ensure that the test is comprehensive, balanced, and aligned with learning outcomes.

the two rubric criteria corresponding to 'Oral and Written Communication'. The learning target for this SLO was met as all 5 students received a rating of 'Pass' (2 points) or higher from most committee members.

	Committee Member			
	#1	**#2**	**#3**	**#4**
	Student: Mary			
Student demonstrates ability to orally present and defend problem, objectives, approach, and conclusions	2.0	2.0	3.0	2.0
Student's writing is clear, organized and of professional quality	3.0	2.0	3.0	2.0
	Student: Yuting			
Student demonstrates ability to orally present and defend problem, objectives, approach, and conclusions	2.0	2.0	2.5	2.0
Student's writing is clear, organized and of professional quality	2.5	2.0	2.5	2.5
	Student: Nick			
Student demonstrates ability to orally present and defend problem, objectives, approach, and conclusions	2.5	2.5	2.0	2.0
Student's writing is clear, organized and of professional quality	2.5	3.0	3.0	2.5
	Student: Sunita			
Student demonstrates ability to orally present and defend problem, objectives, approach, and conclusions	2.5	2.5	2.5	2.0
Student's writing is clear, organized and of professional quality	2.5	2.5	3.0	2.5
	Student: Javier			
Student demonstrates ability to orally present and defend problem, objectives, approach, and conclusions	2.5	2.5	2.5	2.5
Student's writing is clear, organized and of professional quality	2.5	2.5	3.0	2.5

2. **Data Summary:** The table and graph below show the level of students' communication skills averaged across the four committee members. All students in the 2022-2023 cohort received a mean rating of above 2 points ('Pass' or higher) on both criteria. The program appears to be effective in teaching doctoral students to communicate orally and in writing.

	Mary	Yuting	Nick	Sunita	Javier	Cohort Average
Criterion #5: Oral Communication and Presentation	2.3	2.1	2.3	2.4	2.5	2.3
Criterion #6: Written Communication	2.5	2.4	2.8	2.6	2.6	2.6



3. **Data Patterns:** There are several data patterns that are evident in the table and graph above:

    - All 5 students scored lower on the 'Oral Communication and Presentation' criterion (2.3, 2.1, 2.3, 2.4, 2.5) than on the 'Written Communication' criterion (2.5, 2.4, 2.8. 2.6, 2.6). This pattern is also reflected in the cohort averages: 2.3 average points for criterion #5 vs. 2.6 average points for criterion #6.

    - Javier's communication skills received the highest ratings (2.5 and 2.6). Yuting's communication skills received the lowest ratings (2.1 and 2.4). Nick's two types of communication skills received the most disparate ratings (2.3 for oral vs. 2.8 for written communication).

4. **Analysis Summary**: The learning outcomes results were discussed at the graduate curriculum committee meeting. Students' major professors and dissertation defense committee members were in attendance and were able to interpret and contextualize assessment data for the 3 program-level SLOs, including SLO #3 'Oral and Written Communication'.

    - This is the third year in a row that our doctoral student cohort average for this SLO is above 2.5 points. It is likely that students' written communication skills are demonstrated at a high level because students have ample opportunities to develop this skillset. Academic writing is taught and practiced in three required program courses. The dissertation drafts are reviewed multiple times, and each time, detailed feedback with tracked edits and comments is provided to the student by their major professor.

- It is likely that students' oral communication and presentation skills are demonstrated at a comparatively lower level because there may be insufficient opportunities to develop this skillset. Before their dissertation defense, students are only required to present at two points in program curriculum – at the end of the graduate seminar course and during their preliminary defense.

- Javier's major professor commented that his well-developed communication skills are in line with Javier's overall academic performance. Yuting's major professor commented that her comparatively lower rated communication skills also reflect Yuting's overall prior academic achievement. Nick's major professor commented that although the high ratings for his written communication skills were expected, lower ratings for the oral communication and presentation skills were surprising. The professor shared that Nick was not feeling well on the day of the defense, which likely affected his ability to deliver a strong presentation.

The Office of IPA developed various fillable data analytic templates that automatically produce summary tables and graphs once student assessment data is entered in the table on the first tab. The templates are available for download on the IPA website.

Step 14: Sharing and Discussing Learning Data

Because assessment data is useless if it does not inform instruction, a very important aspect of the assessment process is arranging for a formal analysis of the outcomes data and discussion of possible changes to be implemented in response to the analysis of results. The following strategies are excellent ways to build and sustain strong assessment processes and culture:

- A central program leader (chairperson, assessment coordinator, graduate studies director, etc.) schedules a meeting at the end or at the beginning of the academic year. This meeting should be specifically designated for sharing and discussing the learning outcomes data. It is best if the meeting is in person and is about two hours long. All instructors who teach courses or oversee learning experiences where assessment takes place should be present and prepared to contribute to the analysis of results. They should bring notes about learning data patterns and trends and examples of student work to help illustrate their main points.

- There should be one specific individual designated (e.g., a meeting attendee, an administrative staff member) who will be taking minutes/notes. If the meeting is held via zoom/teams, the built-in transcription and copilot/AI functionalities can be used to document and summarize the discussion. Documenting the meeting will help preserve important information and will provide evidence of faculty engagement with the assessment process, in accordance with our accreditation requirements (see Criterion 4B in the Higher Learning Commission Criteria for

Accreditation). Programs should upload a copy of the meeting summary in the IE Portal along with the annual outcomes assessment report.

- It is a good practice to establish a formal process for checking that everyone followed through with the planned changes. For example, at the meeting, instructional faculty may choose a time point halfway through the semester when they provide an update to other faculty and/or to the assessment coordinator regarding the status of any changes they decided to implement in the new year.

- Share good news every chance you get! When there is evidence that changes to curriculum or the instructional process resulted in measurable improvement in student learning, programs should let faculty know and acknowledge everyone's effort and contribution to providing our students with the best possible education.

Step 15: Closing the Loop

Every year, programs need to 'close the loop' on prior year'(s') improvement action(s) by explicitly stating whether those changes were indeed implemented as planned and whether they had the intended positive effect on student learning.

To illustrate, let's extend and apply Scenario A found in Step 13 above (found on page 44-46) for closing the loop. Based on the analysis of learning results, the instructor selected and implemented the following changes:

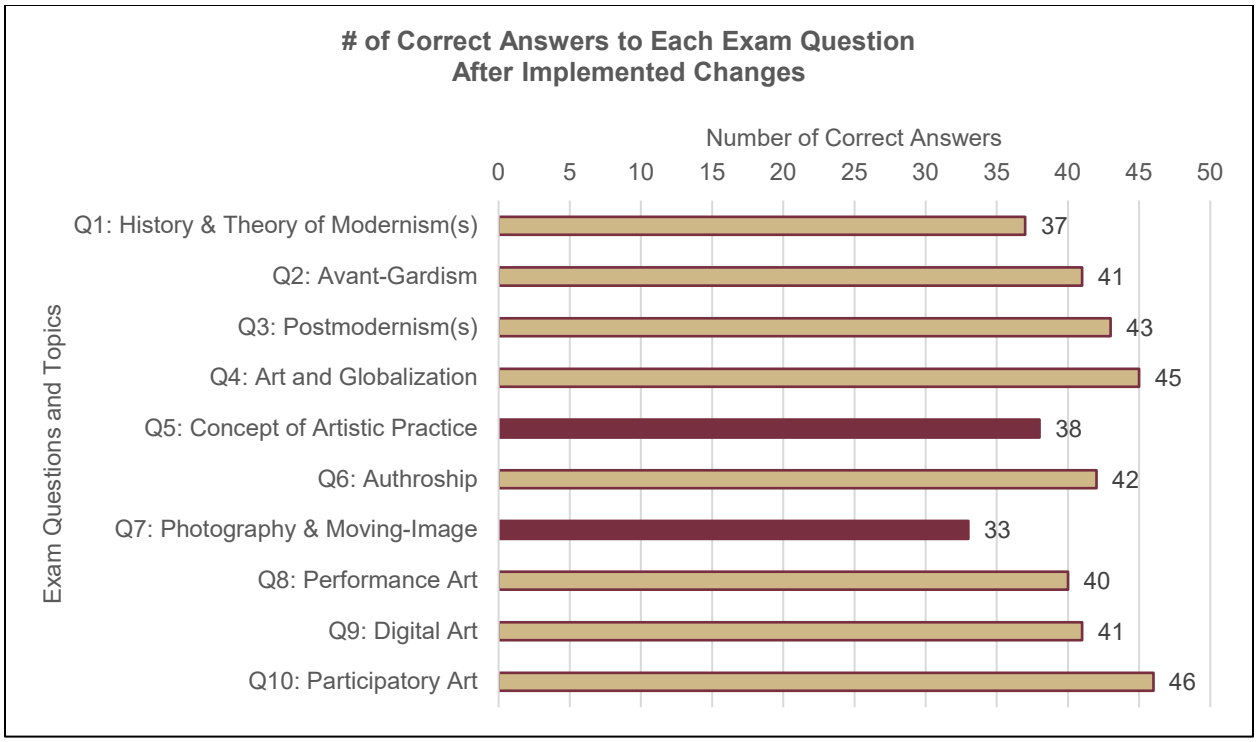
- Question 5 was retained as is because the instructor determined that the concept of artistic practice was not given sufficient instruction time, so the instructor included extra slides on this topic and added an associated homework assignment for more practice,

- Question 7 multiple choice answer options were changed because the instructor determined that they included one obviously wrong option, which made the question very easy.

A year later, at the end of the Spring 2023 semester, the instructor again administered the 10-item exam designed to assess SLO #2 for students' knowledge of art historical study. As illustrated in the graph below:

- Question 5 responses improved from 29 correct answers in Spring 2022 to 38 correct answers in Spring 2023. It appears that the change in lecture slides and homework assignment helped students gain better understanding of the artistic practice concept,

- Question 7 responses improved as well – this time, only 33 students responded to the question correctly as opposed to all 50 students last Spring. It appears that Question 7 was no longer too easy and may now be the most difficult test item, thus deserving another look.



Step 16: Reporting the Assessment Results and Their Analysis

At the end of each academic year, after educational programs have a chance to collect, share, and analyze their student learning data, a departmental representative reports program results in the IE Portal.

Results Statement. A proper results statement for each SLO is brief and mostly quantitative (it includes the number of students, counts of correct answers, overall percentages, dates/semesters, etc.) and answers four questions as illustrated below.

- **When?** • In Fall 2021 and Spring 2022,
- **Where?** • in two sections of MET 4400C “Instruments & Observations” course,
- **Who?** • 58 out of 96 (60%) students who participated in the target assignment
- **Did What?** • correctly answered at least 12 out of 15 (80%) final exam questions assessing this SLO.

In addition, SLO results can be disaggregated using the following approaches:

- Breakdown by assignment parts (e.g., exam questions, rubric criteria), especially if there are noticeable differences in levels of learning for different parts of the assignment,

- Breakdown by source of assessment data in cases when more than one assessment instrument (e.g., Quiz 1 and Quiz 2) was used in SLO assessment,

- Breakdown by semester, especially if there are noticeable by-term (Fall vs. Spring) differences in demonstrated levels of learning,

- Breakdown by student groups (e.g., majors vs. non-majors, females vs. males, Pell grant recipients vs. non-Pell grant recipients).

Analysis of Results. The analytic section of the assessment report should include the following elements:

- Description of important data trends (across time):

    - Compared to last year, did levels of learning increase, decrease, or stay the same? Have the numbers been consistently trending down or up for a while? For example, did student learning of a particular theoretical concept improve or worsen over time? Why do you think this happened?

- Description of important data patterns (within single year):

    - Did some groups of students behave differently from other groups? For example, did students in one section of a course demonstrate higher levels of learning than students in another section of the same course? Or did students struggle with a particular set of questions on the comprehensive exam compared to other questions? Why do you think this happened?

- Description of specific and significant factors that (may have) negatively and/or positively influenced the results:

    - Did any decisions, actions, or events affect demonstrated levels of learning? For example, does switching from an in-person to an online exam seem to increase the average student's score? Does removing homework assignments appear to lower final exam grades?

Data Trend(s)	• Compared to last year's results (52% of students), this year, a greater proportion of Meteorology majors achieved mastery on the 'Use of Tools and Evidence' SLO (60% of students scored 80% or higher on the target assignment).
Data Pattern(s)	• This year, out of the 15 final exam questions assessing this SLO, the question that was correctly answered by fewest students (32 out of 96) is the question on how to choose the appropriate statistical test for different research questions. In particular, students struggled differentiating between a t-test and a one-way ANOVA.
Positive and/or Negative Influencing Factors	• We also noticed that there were quite a few students (about one fifth) who did not complete the entire final exam because they ran out of time. This happened both times the course was taught last year (in Fall and in Spring term). It is likely that some students did not demonstrate this SLO because they did not get a chance to try to answer those exam items.

(Partially) Missing Data. In cases when data/information necessary for reporting and analysis of SLOs is missing or is incomplete, programs should report results using the best available data/information, even if it only includes anecdotal evidence and/or course final grades. In addition, they should explain the reasons for (partially) missing data/information and describe steps that will be taken in the new assessment cycle to ensure the issue does not recur.

Programs with Small Enrollment. When evidence of learning comes from small groups of students, it can be difficult to draw definitive conclusions. One or two students who by chance demonstrate levels of learning that are too high or too low can skew the overall results of the entire group of 5-10 students. In these cases, the Office of IPA recommends collecting SLO data from students in successive cohorts.

For the purposes of outcomes assessment, the minimum number of students whose SLO data are aggregated should be 10 for undergraduate programs and 5 for graduate programs. In cases when there are fewer than 10 or 5 students, respectively, in a given reporting period, educational programs should wait till the end of the next year(s) and combine the data. If there are fewer than 10 undergraduate or 5 graduate students who participated in assessment over a 3-year period, programs should report using all available outcomes data even if for samples under the desired headcount.

While waiting for enough evidence to accumulate, programs should collect learning outcomes data every year and securely store it. When completing mandatory annual reporting of SLO results in the IE Portal, programs are advised to submit statements along the lines of the below:

- Results Statement: "*There were 3 students who participated in assessment of this SLO in 2021-2022 academic year*."

- Analysis of Results: *"Due to limitations of the small sample size, students' results for this year are not reported or analyzed."*

- Improvement Action(s): *"Because there were fewer than 10 unique students in this academic year who participated in this SLO assessment, we will wait till the end of the next academic year and combine the data. If there is still insufficient learning data, we will wait one more year, combine three years' worth of data into one dataset, and report results, provide their analysis, and formulate improvement actions."*

Programs Delivered in Multiple Locations/Modalities. As mentioned earlier in this handbook, educational programs that are offered on multiple campuses (Tallahassee, Florida; Panama City, Florida; Sarasota, Florida; Panama City, Republic of Panama) and/or in multiple modes of delivery (face-to-face and distance learning/online) are expected to have the same SLOs, but a separate set of annually reported results for each active location/modality in which the program is delivered. This expectation comports with SACSCOC's requirement that an "institution does have an obligation to establish comparability of instruction across locations and modes." (SACSCOC Resource Manual, p. 190).

For example, if students enrolled in the face-to-face version of the program at the Tallahassee campus demonstrated levels of learning that are substantially lower from the levels of students enrolled in the same degree program delivered online, the sources for this discrepancy should be analyzed and addressed. Perhaps, there is an issue that is only present in the face-to-face version of the program; in this case, the Improvement Action(s) plan for that modality should explain how this issue will be corrected – for that specific mode of delivery, not both.

Most of the time, levels of student learning will be comparable across the different locations/modalities. In these cases, when completing reports, the narratives for the Analysis of Results and Improvement Action(s) may be similar or identical. Please follow the instructions in the IE Portal User Guide when reporting on outcomes of students 'belonging' to different program locations and modes. The Office of IPA is available to help disaggregate SLO data by program location/modality.

Step 17: Formulating Improvement Action(s)

The most intensive part of the assessment process is devising plans for, and executing, changes to teaching and learning. Formulating sound improvement plans requires participation, engagement, and meaningful contribution on the part of instructional faculty and curriculum committees. Whether SLOs have been met or not, program faculty and leadership need to determine a plan of action for the next year.

Occasionally, the level of student learning does not meet the desired standard. In this case, academic programs should examine potential reasons for why the standard for success was not met and then develop a set of enhancements to be put in place in the upcoming year(s). These plans should be based on the learning outcomes data and describe specific new and/or different changes to be implemented, including revising instructional materials, adding or removing topics from taught content, incorporating more hands-on activities, etc. Improvement plans may also require new or modified assessment practices or professional development. Importantly, *"[p]lans to make improvements do not qualify as seeking improvement, but efforts to improve a program that may not have been entirely successful certainly do*." (SACSCOC Resource Manual, p. 69).

In cases when SLOs are being consistently achieved at a high level for several years, it is recommended to either increase the standard for success or to add a new SLO that would address other important learning outcomes. If these changes are not feasible, academic programs should consider how they expect to maintain a high level of student learning.

Most improvement actions undertaken by educational programs fall into five categories; these changes should be considered and implemented one after another, in the order specified below:

FIRST: Refinements to the way learning outcomes are assessed	Because any changes to teaching and learning should be made based on reliable and valid data, which comes from a well-thought-out assessment methodology, a strong assessment design should be considered first
SECOND: Changes to how target content and skills are taught and practiced	Analysis of robust, rich, accurate student learning data should inform and logically lead to any, small or large, changes to the instructional process
THIRD: Adjusting expectations for levels of learning	Raising or lowering of the SLO numeric targets should happen after we made all feasible improvements to assessment methodology and instruction in response to robust evidence
FOURTH: Updating learning outcomes for the program	'Retiring' existing outcomes should happen rarely and typically only after the three approaches above have been exhausted; however, new learning outcomes can be introduced at any point
FIFTH: Monitoring levels of learning and/or collecting more evidence	When programs need more data to make a decision, they can choose to refrain from making any changes until they have more evidence to confirm that a particular learning data trend or pattern exist, and then act upon this information

Improvements to the Assessment Process:

- *Switch from using course letter grades and/or percentages/points to using grades and/or percentages/points earned by students on specific assignment(s)*:
    - Instead of using a course letter grade, choose the number of points earned by the student on a midterm reflection essay.
- *Specify or change the course(s) in which assessment is conducted* (align SLOs with program curriculum):
    - List the specific course number and course name (or a series) where assessment of SLOs will occur,
    - Move SLO assessment to a later course in the program's sequence to give students more time to develop mastery,
    - Move SLO assessment to a course that is better aligned with the nature of the learning outcome (e.g., assess fundamental disciplinary knowledge in a theory course as opposed to research methods course),
    - Move SLO assessment from an elective to a core course in the program's curriculum to measure learning of a larger group of students (e.g., all students in program's single major/concentration track, all majors/concentration tracks in the program, non-majors).
- *Specify or change the assessment instrument(s) used to measure the SLO:*
    - List the specific course assignment or learning experience (or a series) that will be used to assess the SLO,
    - Replace one assignment with another that is better aligned with the nature of the learning outcome (e.g., switch from a multiple-choice quiz to an essay to better assess student's written communication skills),
    - Use a specific subset of questions from an exam that are specifically focused on the SLO instead of using the overall exam score, which may include student performance in areas not related to the SLO.
- *Change the instructions/prompts in the assessment instrument(s) used to measure the SLO:*
    - Expand, shorten, rephrase, clarify, or otherwise edit the directions associated with the assessment instruments so that students better understand performance expectations.

- *Design or change a rubric used to measure one or several SLOs* (rubric examples)*:*

    - Create a rubric to better assess multifaceted observable performance by a student on a single assignment using a set of predetermined expectations (e.g., a capstone project is used to assess 3 SLOs, each corresponding to a separate criterion on a rubric using a 3-point scale (exemplary=3, acceptable=2, unacceptable=1)),

    - Change the rubric type, used dimensions/criteria, rating scale, or description of expected performance (e.g., add a previously missing important assessment criterion 'flow, logic and clarity of writing').

Improvements to Instructional Materials and/or Pedagogical Approaches:

- *Change or add new instructional materials:*

    - Provide more and/or enhanced in-class and/or outside-of-class opportunities for students to develop their knowledge and skills in certain areas (e.g., supplement a lecture with a small-group activity focused on application of learnt content/skills),

    - Conduct an evaluation of course topics for their currency and relevancy and make any necessary updates (e.g., update course syllabus and slides to include content covering some latest technological advancement),

    - Create a rubric to accompany the high-stakes, culminating/final course assignment so that students (especially those from under-resourced backgrounds) can better understand the performance and grading expectations.

- *Organize or strengthen pedagogical and assessment structure:*

    - Embed formal assessment of student learning into annual workflow (e.g., reserve time during faculty retreat before the start of the academic year to jointly review prepared report on SLOs, to analyze achieved levels of learning, to discuss enhancements, and to document the process),

    - Collaborate with institutional partners on assessment design (e.g., work with faculty in the Center for the Advancement of Teaching to enhance how a given course reinforces an SLO),

    - Arrange for standard instructional and/or assessment materials to be used in different courses and/or course sections where the same SLO is assessed (e.g., embed a set of the same 10 questions assessing a

specific SLO into every final exam in course sections taught by different instructors).

Fine-Tuning the Standard(s) for Success:

- *Define or change the acceptable level of mastery:*
    - Specify a minimally acceptable level of student performance on a measure of learning (e.g., decide that at least 15 correctly answered questions out of total 20 questions on a final exam (75%) constitutes a satisfactory level of content knowledge for a student successfully graduating from the program),
    - Increase or decrease the minimally acceptable level of student performance (e.g., adjust the standard from at least a C (73%) to at least a B- (80%) on a term paper used to assess the target SLO).
- *Define or change the threshold of acceptability:*
    - Specify the minimum percentage of students who must show certain level of performance for the SLO to be considered successfully achieved by the students in the program (e.g., decide that at least 80% of majors enrolled in the course must achieve the acceptable level of mastery),
    - Increase or decrease the minimum percentage of students demonstrating the minimally acceptable level of performance (e.g., lower the standard from a 100% to at least 90% of students who defend their dissertations each year achieving a certain rating on a criterion in a rubric).

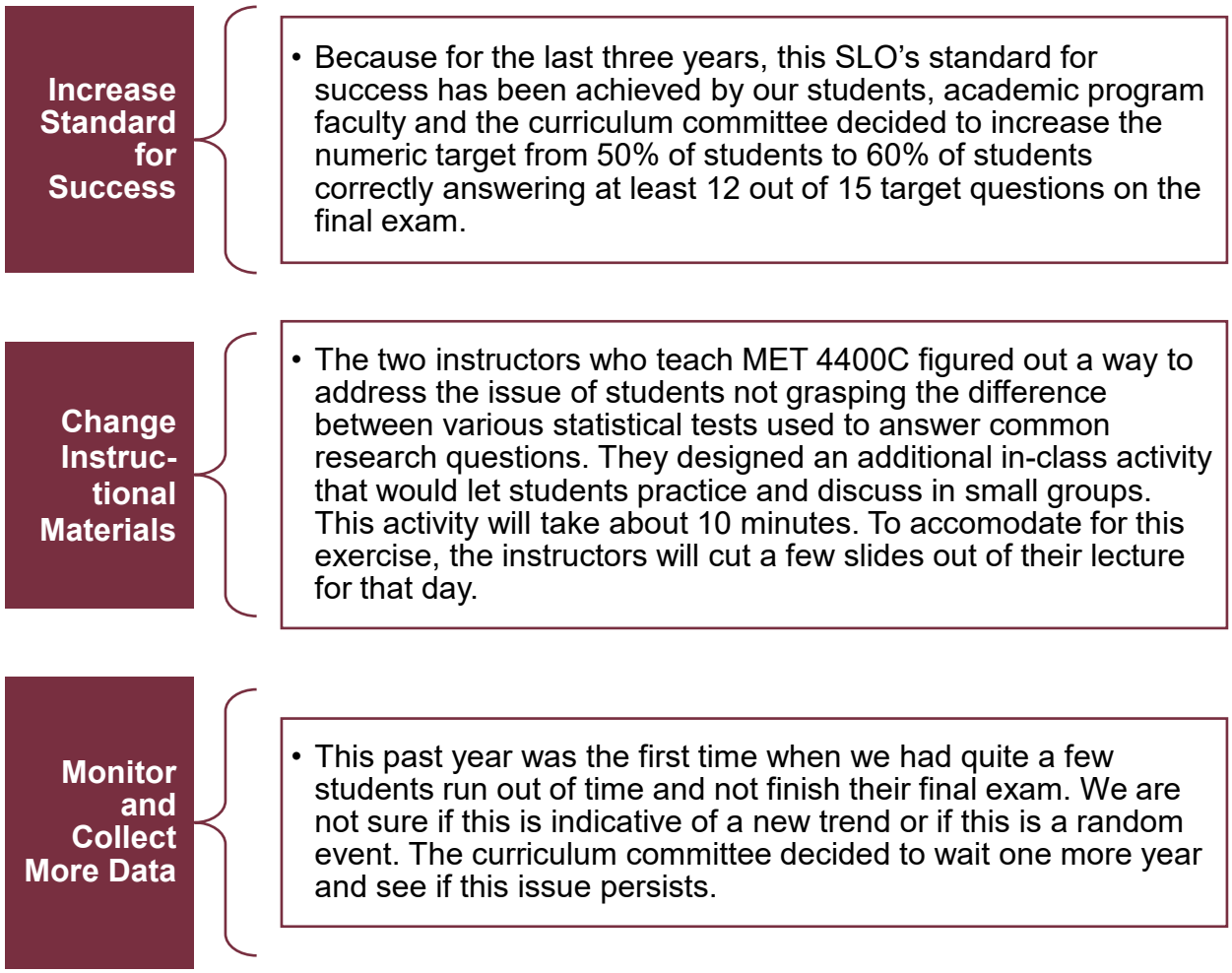
Updating Learning Outcome(s):

- *Retire a learning outcome in pursuit of a new learning outcome:*
    - If an SLO has been assessed and has been met consistently and at high levels for many years, there is sufficient evidence that the program curriculum is effective at preparing students to demonstrate knowledge and skills associated with this learning outcome. This SLO may be ‘rotated out’ and another, perhaps almost as important, learning outcome can be ‘rotated in’.
    - If there are changes in the academic discipline, such as new tools and technologies, fresh scientific discoveries, and/or innovative techniques, once the new content is incorporated into the curriculum, there may be a need to either select new SLOs or update existing SLOs, so they include the new knowledge sets or skills.

Monitoring and/or Collecting More Evidence:

- *Do not make any changes until more learning data is available:*
    - Wait another year to collect more learning data to confirm a learning trend or pattern (e.g., in 2022-2023, students showed a slightly decreased level of learning for an SLO, but program faculty believe this happened by chance and want to see if student achievement for this SLO returns to expected levels next year).

Below is an example of a narrative as can be submitted in the IE Portal in the 'New and/or Different Improvement Action(s)' field:



A complete example of an assessment report for an SLO, with all required fields in the IE Portal filled in, is provided in Appendix G.

PROGRAM OUTCOMES

Selecting Program Outcomes

Unlike the SLOs, which are focused on improving student knowledge and skills through better learning experiences, Program Outcomes (POs) reflect the broader, non-curricular goals of educational programs and academic departments. Most POs for educational programs are chosen because they are important metrics indicating the overall success of the program and/or various aspects of faculty and student success. Dependent on each academic department and/or individual educational program's strengths and weaknesses, needs and priorities, and long- and short-term goals, chosen POs typically fall into four categories:

1. Outcomes focused on the department and/or **program success**, such as student enrollment, credit hours, awarded degrees, application and admission rates.

2. Outcomes focused on a specific dimension of **student success**, such as student persistence/retention, degree completion/graduation, post-graduation success (jobs and/or further studies), licensure/certification passage rates.

3. Outcomes focused on a specific dimension of **faculty success**, such as faculty recruitment and retention, scholarly productivity, instructional output, faculty awards and accomplishments.

4. Outcomes directly focused on a specific aspect of the **University Mission** and/or **Strategic Plan**, such as participation in teaching workshops and seminars ("excellence in teaching") or involvement in university committees and programming ("excellence in service").

When choosing new POs and/or improving their assessment processes, educational programs should select them from the recommended list provided in Appendix H and on the IPA website. The recommended POs, their assessment plans, and numeric targets may be adapted as is or adjusted to fit the specifics of each department/program. There is more information on pursuing outcomes not included on the recommended list further in the Handbook, in the section on designing the assessment process).

Alignment. Selected POs must support the Goals and Initiatives of the FSU Strategic Plan, and they may – directly or indirectly – support state funding metrics, a strategic plan of the program's College, the requirements of program's specialized accrediting agency, and/or other priorities of the program's home College/department.

POs should be aligned with 1-3 Strategic Plan Initiatives (see Appendix I). This process is known as 'institutional back mapping'; it allows for a visual representation of the link between the goals of individual programs and the strategic priorities of the institution (Nichols & Nichols, 2005, pp. 62-66). This alignment must be documented in the IE Portal (for instructions, see the IE Portal User Guide). Appendix I provides examples of

different POs' alignment with the initiatives of the FSU Strategic Plan. POs should also be aligned with budgetary decisions and resource allocation. Outcomes and their level of achievement may even be directly referenced in the annual department- and college-level budget request; however, the university's IE process is not the primary mechanism for requesting funding. Finally, all planning, assessment, and implementation activities should relate to, and advance, the University's mission, core values, and vision.

Measurability. Educational programs are advised not to select POs that resemble a 'to-do' list or a plan to accomplish a task or a series of tasks, especially if they can only be completed if new funding is requested and received (e.g., hiring an employee, renovating office suite, buying new computers). When achievement of an outcome is heavily reliant on new or increased funding, the program should request it through the proper channels (e.g., the annual college budget request process) and attach a copy of the budget request in the IE Portal.

In rare cases when a unit has a strong preference for focusing on short-term (one year) or multi-year operational processes or tasks as their outcome, the assessment plan for such a PO must include a detailed timetable with a description of specific steps and deliverables and their due dates. In this case, the targets for the outcome will be meeting the schedule for all deliverables outlined in the plan.

Level of Control. Typically, departments and programs can more directly influence activities and strategies aimed at achieving a certain outcome (e.g., enhancing the quality of academic advising to support retention and timely graduation, increasing the number of manuscript submissions with faculty and students as co-authors to grow doctorate graduates' placement rates in academia). POs that measure activities and outputs are easier to affect; POs that measure final results of (multiple) activities are often not fully within the program's control. New educational programs should use measures of activities and outputs; when the program matures, it should focus on measuring the final desired outcomes and the effectiveness of their activities.

Sometimes, a PO is more appropriate to be a department-level goal as opposed to a degree/certificate program-level goal. For instance, many efforts aimed at increasing faculty success apply to all faculty members because they all belong to one department and not to a specific educational program. Here, the best approach is to communicate with other program assessment coordinators and the department chair and have all educational programs in the department adopt the same PO.

Retiring Program Outcomes. It is unusual to have a PO pursued for only one year; the typical 'lifespan' of an outcome is 3-6 years. A longer implementation period allows for more thoughtful planning, consistent multi-year assessment, and data-based, sustained enhancement efforts. Reasons for 'retiring' a PO may include: (1) the outcome that the department/program wanted to attain has been achieved and that achievement appears to be sustainable, (2) the outcome is no longer a priority for the department/program, (3) the outcome needs significant modification. Academic units are encouraged to contact the Office of IPA to consult on sunsetting existing and/or selecting new POs.

Stating Program Outcomes (in the IE Portal). Below and in subsequent sections, all assessment report components (as they are requested in the IE portal) are illustrated using an example PO from the Criminology Bachelor's degree program.

- Provide a succinct name for the PO:

  PO Name: *PO - 2-Year Transfer Students Graduation Rate.*

- Identify the expected outcome that academic department and/or degree/certificate program will strive to achieve:

  PO Statement: *Transfer students in the Criminology program will graduate from FSU within two years at a higher rate.*

Designing Assessment Process

Assessment methodology for a PO should be focused on accurately measuring the extent to which the desired results were achieved. It is important to evaluate outcomes with appropriate assessment instruments, using sound methodology, and in a consistent fashion to allow for year-over-year comparison.

Educational programs who wish to pursue an outcome that is not featured on the recommended list should follow certain guidelines when they design the assessment plan for their custom PO. The assessment plan should provide information that answers the following questions:

- Why is this outcome important? Briefly describe the service, program, activity, etc. that is the focus of your PO. How does it benefit FSU students?

- What data/information will be used in assessment? Regardless of whether you already collect this data or information for another purpose or if you plan to develop a new data collection tool (such as a survey, a third-party analytics report, an attendance tracker), describe the process of collecting and aggregating data/information for reporting.

- Which groups of students/faculty will be included or excluded? Will you collect information about various characteristics of your population of interest (e.g., home department/college, race/ethnicity, job codes and titles, year in college)?

- What will be counted, tallied, multiplied, divided, etc.? What is the best method of summarizing the data: unique headcount, duplicated totals, average satisfaction rate, percentages, ratios, etc.? What breakout (disaggregation by various characteristics) will be necessary to provide a comprehensive picture of important trends and patterns?

- What is the assessment timeframe? Will you use academic, fiscal, calendar, or some other type of year? What is the exact start and end date for the tracked activity on which you will be reporting?

- Who in your department/program will be responsible for pulling the data/information every year for assessment and reporting? Will aggregated results be shared and discussed with other faculty and academic leadership? When and where (e.g., at faculty retreat every August)?

Occasionally an outcome remains a priority of the department/program, but its assessment plan requires revision. The IE Portal User Guide provides instructions for 'inactivating' an outdated assessment plan and adding a new plan that will be used to assess the same outcome.

Below is an example assessment plan description for the Criminology Bachelor's PO:

For this PO, we will track 2-year graduation rates of undergraduate students who transferred to FSU from the Florida College System (FCS) and declared Criminology as their major. FCS transfer students already have an Associate's degree and, in most cases, should be able to graduate with a Bachelor's degree from FSU in two years. 2-year grad rate is calculated by dividing the number of transfer students who graduated from FSU by the end of their second year by the total number of transfer students in the original cohort. Graduation rates will be retrieved from the Graduation/ Retention reports published by the FSU Office of Institutional Research at https://ir.fsu.edu/graduation_retention_secure.aspx. Full methodology is described on the first page of the report.

Setting the Numeric Target

Just as many successful road trips begin with planning what mile markers should be achieved at various time points during the journey, setting multi-year quantitative objectives helps gauge whether an adequate amount of progress toward the desired outcome is being made.

Goals. For the purposes of PO assessment, a goal denotes a desired numeric change between two values. For example, increasing program enrollment by 5 students every year, or speeding up student graduation by an average of one week every year, or improving student post-graduation placement rate by 3% annually.

It is important to distinguish between the "percent" increase or the "percentage point" increase. For example, a 5 percent increase can mean increasing the number of students enrolled in a new degree program from 20 to 21. Alternatively, a 5-percentage point increase can mean increasing graduation rate from 70% to 75%. (Here is more information about the difference between a percent and a percentage point.)

Benchmarks. A benchmark denotes a minimum or a maximum numeric threshold that the unit will strive to meet. For example, having at least 90% of students in the program complete a summer internship in their field of study. Or not having more than 5 students drop out of the certificate program annually.

Timetables. Qualitative (non-numeric, descriptive, text) information may also be used to measure POs, but this approach to setting targets is less precise and is open to subjectivity. As mentioned above in the sub-section on measurability, in rare cases, when a department/program has strong preference to focus on operational processes and tasks, the assessment plan for such POs must include a detailed timetable with description of specific steps and deliverables, and their due dates. Microsoft Planner is available to all FSU employees. It may be used to create electronic project management plans, including timelines. In addition, several stand-alone customizable project timeline templates are available to download here.

Standards for Comparison. When degree/certificate programs determine numeric targets, they may study performance of similar programs at FSU or at other peer institutions and/or review their own past levels of achieving the PO. The numeric target should be set at a level that is ambitious, yet achievable with some effort.

"[W]ithin institutional effectiveness, departments are free to stretch themselves to the limit and to attempt innovative approaches to provide services without fear of failure. Within institutional effectiveness, departments are not held accountable for failure or success, only for having in place a process for stating outcomes, measuring accomplishments, and using the results to improve programming." (Nichols, 1995)

Changing or Appending the Numeric Target. Over the years, the numeric target(s) for the same PO may evolve. Sometimes programs decide to decrease or increase their PO goal or benchmark. In this case, historical numeric targets must be preserved in the IE Portal, and any new information must be appended onto the existing content in the 'Numeric Target' field, with the timeframe to which the new target applies specified (e.g., "Beginning in the 2021-2022 academic year, the benchmark will be increased from at least 300 awarded degrees in a year to at least 350 awarded degrees").

Stating Numeric Targets (in the IE Portal). Below is an example of a specific, multi-year measurable numeric target that defines success in achievement of the Criminology Bachelor's PO:

Over the next five years, the 2-year graduation rate will increase to at least 51%.

- *Baseline Year: 2017 cohort = 46.0% 2-year grad rate*
- *Year 1 Plan: 2018 cohort = at least 47.0%*
- *Year 2 Plan: 2019 cohort = at least 48.0%*
- *Year 3 Plan: 2020 cohort = at least 49.0%*
- *Year 4 Plan: 2021 cohort = at least 50.0%*
- *Year 5 Plan: 2022 cohort = at least 51.0%*

Providing the Results Statement

During the academic year, degree and certificate program faculty and staff deliver instruction and support to students as planned at the beginning of the year. At the end of each assessment cycle, educational programs either aggregate information/data collected internally or retrieve it from centrally maintained sources according to the assessment plan documented at the beginning of the year. The results are used to determine the levels at which the PO was achieved. A proper results statement is usually brief and mostly quantitative (i.e., includes counts, percentages, total, etc.).

In cases when data/information necessary for reporting of results is missing or is incomplete, units should provide the results statement using the best available data/information. In addition, the units should explain the reasons for missing data/information and describe steps that will be taken in the new assessment cycle to ensure the issue does not reoccur.

Below is an example of presenting information regarding the levels at which the PO target was achieved:

By the end of the academic year 2019-2020 (Fall, Spring, Summer), 72 out of 153 Florida College System (FCS) transfer students from the most recent Criminology program cohort (Summer/Fall 2018) graduated from FSU. Thus, the 2-year graduation rate of the 2018 transfer student cohort is 47.1%. This is higher than last year's graduation rate of 46.0% (81 out of 176 students). The benchmark to increase graduation rate of this population of students to at least 47.0% was achieved. Screenshot of the data table retrieved from IR's Graduation/Retention model is below.

Cohort Year	Original Cohort	Number of Graduated	2-Year Grad Rate
2018	153	72	47.1
2017	176	81	46.0
2016	179	83	46.4
2015	211	97	46.0
2014	189	84	44.4

Analyzing Results

The culmination of the assessment process is the analysis of why the outcome was achieved at the level that it was. Programs should identify any noticeable data trends or patterns and determine the reason(s) why the PO was attained at this level. Most reasons will include specific factors, decisions, actions, and events that negatively and/or positively influenced the results. A strong analysis of results:

- ‘Closes the loop’ on the prior year’(s’) improvement action(s) by explicitly stating whether those changes were implemented as planned and whether they had the intended positive effect. This is a significant part of the analysis that is becoming increasingly important to institutional accreditors.

- Compares most recent PO results to past year: Did the numbers go up, go down, by how much, or did they stay the same? Why?

- Identifies any important data trends (across time) or patterns (within single year): Have the numbers been consistently trending down or up for a while? Why? Did some groups of students behave differently from other groups? Did groups’ values change over time? Why do you think this happened?

- Identifies specific and significant factors that (may have) negatively and/or positively influenced the results: Did any decisions, actions, or events directly affect the numbers?

- Includes takeaways from internal discussions regarding the data: Have the results been discussed internally (at a faculty meeting/retreat, with select individuals inside your department, with leadership)? What is their opinion about the results? Did they notice any data trends or patterns?

- If applicable, addresses the representativeness of results: If survey data is reported, what was the response rate? If partial data is reported, explicitly state what data is missing and explain why.

- If applicable, includes explanation of why the PO assessment process and/or instrument needs to be changed.

- May have a similar structure but cannot contain verbatim copies of the narratives from past years. It is expected that specific elements of the analyses will vary year over year due to differences in influencing factors, data, leadership, depth and focus of the analysis, etc.

- Is supported by documentation, such as data tables and graphs, minutes/notes from faculty meeting(s) where results were discussed, historical SLO levels information. These kinds of records provide evidence of assessment and are required to be submitted to SACSCOC when these files are available.

Below is an example of analyzing the data and reason(s) for the attained results:

We believe that the slight increase in the transfer students graduation rate is due to changes we instituted before the last academic year, specifically, advising students to take at least one more course per term when feasible and offering one more required 4000-level course in the summer. This resulted in more 2018 cohort students taking

summer courses and registering for more credit hours per term than transfer students from the 2017 cohort. In the 2018 cohort, 56% of students took at least one summer course, while in the 2017 cohort, 48% did the same. Also, in the 2018 cohort, the average Fall/Spring credit load was 12.24 credit hours, while in the 2017 cohort, it was 11.88.

We hypothesize that the increase in the graduation rate was modest due to several different reasons. One factor that negatively affects transfer student graduation rate is students leaving the program and the university altogether. Anecdotally we know that many of our transfer students who left the program were part-time and/or already had jobs and families. Some of them indicated in the 'Non-Returner' survey that it was difficult to stay engaged with academics and feel connected with faculty and other students.

Formulating Improvement Action(s)

The most important component of the annual assessment process is devising and implementing changes to enhance program quality based on the results and their analysis. Formulating sound improvement plans requires the participation, engagement, and meaningful contribution on the part of academic program leadership, instructional faculty, and curriculum committees. Whether PO targets have been met or not, it is the responsibility of the program faculty and leadership to determine a plan of action for the next year.

Importantly, *"[t]he institution should be using the data to inform changes based on evaluation of its findings. Plans to make improvements do not qualify as seeking improvement, but efforts to improve a program that may not have been entirely successful certainly do*." (SACSCOC Resource Manual, p. 69).

When Targets Are Not Met. When an outcome does not reach the desired numeric target, the program should use the insights from the analysis to identify areas where changes are needed and develop a plan to implement them in the new year. These plans should be deliberate, detailed, and should describe specific, new and/or different changes, ranging from small-scale enhancements to more significant ones. Improvement actions may also focus on adjusting the assessment plans and/or the numeric targets.

When Targets Are Consistently Met. In cases when the existing numeric target for the PO is being achieved over several years and the assessment process is considered reliable and consistent, IPA recommends: (1) increasing the numeric target to a more ambitious goal/benchmark, (2) modifying the assessment plan to focus on a different aspect of the same PO (e.g., focus on Pell-eligible students vs. all students), (3) creating a new PO that would address other important areas of the program (e.g., 'retire' an outcome on growing enrollment and select a new outcome on retaining students in the major), (4) if these changes are not feasible, the program should consider how they will ensure that numeric targets continue to be met.

A Strong Improvement Plan:

- Describes specific actions aimed at improving or sustaining performance that will be implemented in the next reporting year,
- Directly addresses any shortcomings identified in the analysis of data/results,
- Provides exact timelines for implementation and people/positions responsible for each part of the plan,
- Does not contain verbatim copies of improvement actions from past years,
- May include actions that are outside of a program's control (e.g., receiving approval for new recurring expense or a new faculty position) and must include actions that are within program's control (e.g., improved communication or outreach, closer review of prerequisites),
- If applicable, states the intention to change the outcome's assessment plan, numeric target, or assessment instrument, along with the reasoning for the change. If the entire outcome is being 'sunset,' the reason for archiving the PO is provided, along with a brief description of the new outcome that will replace it.

Below is an example of specific plans to improve or sustain performance:

To continue growing the number of FCS transfer students who graduate from our program within two years, we will implement the following enhancements:

First, the Dean's Office will plan and organize a 'get together'-type event for our transfer students. They also set aside some funds to support this event. We will invite faculty, staff, students, and their families to a potluck in an informal setting like a park. This event will be held in the Spring semester, right after midterms. We chose this time because transfer students who leave the program most often do so after the Spring term. Hopefully, this experience will create a greater sense of belonging for our transfer students and will give our faculty and staff an opportunity to strengthen student engagement with academics through establishing personal connections with students.

Second, we want to build on the initial success of increasing summer course offerings and average credit hours taken per term. Required CCJ3011 Criminology is already offered during the summer, but there are only two sections of this class, both of which fill up quickly every time. We have requested another teaching faculty line in the budget request to address this and related instructional needs. Copy of the request and associated rationale is attached. In case the line is not funded, we will explore options of having this class taught by TAs and/or as an online class with a larger enrollment cap.

Appendix A:
Assessment Glossary

The assessment process can be confusing, but the terminology can be even more so. Here is a list of commonly used assessment terms you should know. Most of them come from NILOA glossary. Even though the same concept may be termed and/or defined differently depending on the setting (e.g., within your college or department, as used by your discipline-specific accreditor, in assessment literature), we will choose these terms and definitions to be used at FSU for institutional assessment.

Term	Definition
Assessment	Assessment is the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development." (Banta & Palomba, 2015, p. 2; Palomba & Banta, 1999, p. 4).
Assessment Process	A continuous cycle of: • Establishing clear, measurable expected outcomes of student learning. • Ensuring that students have sufficient opportunities to achieve those outcomes. • Systematically gathering, analyzing, and interpreting evidence to determine how well student learning matches our expectations. • Using the resulting information to understand and improve student learning. (Suskie, 2009, p. 4.).
Numeric Target (*f.k.a. Goal/Benchmark*)	A criterion-referenced objective performance data point that can be used for the purposes of internal or external comparison. A program can use its own data as a numeric target against which to compare future performance. It can also use data from another program as a numeric target.
Capstone Courses and Projects	Whether they're called "senior capstones" or some other name, these culminating experiences require students nearing the end of college to create a project that integrates and applies what they've learned. The project might be a research paper, a performance, a portfolio, or an exhibit of artwork.
Criterion-Referenced	A test in which the results can be used to determine a student's progress toward mastery of a content area. Performance is compared to an expected level of mastery in a content area rather than to other students' scores. The "criterion" is the standard of performance established as the passing score for the test. Scores have meaning in terms of what the student knows or can do, rather than how the test-taker compares to a reference or norm group.
Direct Assessment of Learning	Direct methods of assessment are generally thought to be quantitative in nature. In terms of data collection, direct and indirect methods complement one another. Direct methods of collecting assessment data "require students to display their knowledge and skills as they respond to the instrument itself" (Palomba & Banta, 1999, p. 11). When you ask students to respond to questions on an exam, you

	are using the direct method of assessment. Scoring performance on tests, term papers, or the execution of lab skills, would all be examples of direct assessment of learning. Direct assessment of learning can occur within a course (e.g., performance on a series of tests) or could occur across courses or years (comparing writing scores from sophomore to senior year).
Embedded Assessment	"A means of gathering information about student learning that is built into and a natural part of the teaching-learning process. Often used for assessment purposes, classroom assignments are evaluated to assign students a grade. Can assess individual student performance or aggregate the information to provide information about the course or program; can be formative or summative, quantitative or qualitative. Example: as part of a course, expecting each senior to complete a research paper that is graded for content and style, but is also assessed for advanced ability to locate and evaluate Web-based information (as part of a college-wide outcome to demonstrate information literacy)". (Leskes, 2002).
Evaluation (*corresponds to the Analysis of Results field in the IE Portal*)	Using assessment data to understand (level of success or value), judge, and/or improve current knowledge, services, and/or practices. (Suskie, 2009). Both qualitative and quantitative descriptions of progress towards and attainment of project goals based on assessment results versus pre-determined numeric targets/benchmarks. Using collected information to make informed decisions about continued instruction, programs, activities.
Focus Groups	A qualitative approach to gathering data via small groups of people, typically with prepared questions.
Formative Assessment	Formative assessment happens during the learning process and is described by Bailey & Jakicic (2012) as "an activity designed to give meaningful feedback to students and teachers and to improve professional practice and student achievement" (p.14). Formative assessment is often done at the beginning or during a program, thus providing the opportunity for immediate evidence for student learning in a particular course or at a particular point in a program. Classroom assessment is one of the most common formative assessment techniques.
General Education Assessment	Process that measures our General Education curriculum's effectiveness through the systematic collection and evaluation of information about student learning. At FSU, there are 17 General Education learning outcomes that are developed, assessed, and improved across several General Education areas (FSU Office of Liberal Studies).
Indirect Assessment of Learning	Indirect methods are generally thought to be qualitative. Indirect assessments use perceptions, reflections, or secondary evidence to make inferences about student learning. For example, surveys of employers, students' self-assessments, focus groups, satisfaction surveys, and admissions to graduate schools can all provide indirect evidence of learning. Indirect methods of collecting assessment data can be "helpful in deepening interpretations of student learning" (Maki, 2010, p. 213).

Learning Outcomes (*aka Program-Level Student Learning Outcomes, aka SLOs*)	"Outcomes are goals that refer to a destination rather than the path taken to get there - the end rather than the means, the outcome rather than the process. Learning outcomes are the knowledge, skills, attitudes, and habits of mind that students take with them from a learning experience" (Suskie, 2009, pp. 116-117). (Note: some professional organizations and accreditors may refer to these with different terms, such as objectives, indicators, abilities, or competencies.)
Learning Objectives (*aka Course-Level Learning Objectives*)	Describe expected learning that takes place in specific courses. Although aligned with, and supportive of, learning outcomes, course-level learning objectives are 'narrower' than program-level SLOs. Because an academic program should be greater than the sum of its parts (courses), program-level SLOs combine course-level objectives into an amplified, deepened, cohesive, integrated whole.
Mapping	A process that allows us to visually represent what is taught to students, where and how. Narrowly speaking, the curriculum map is a chart that shows in which specific courses various knowledge and skill sets are initially taught, further developed and reinforced, and finally mastered. After students have been provided sufficient opportunity to develop each SLO, evidence of learning is collected. In order to determine if students have indeed gained the desired competencies, each one is assessed using appropriate assignments and methods. The mapping process: • documents how learning is scaffolded across the curriculum, • reveals gaps and redundancies (if any) in the curriculum, • helps design appropriate assignments, • improves communication and encourages reflective practice, • ultimately, benefits student learning experience and outcomes.
Norm Referenced Tests	A test in which a student or a group's performance is compared to that of a norm group. The student or group scores will not fall evenly on either side of the median established by the original test takers. The results are relative to the performance of an external group and are designed to be compared with the norm group providing a performance standard. Often used to measure and compare students, schools, districts, and states on the basis of norm-established scales of achievement.
Performance-Based Assessment	Performance-based assessment is a test of the ability to apply knowledge in a real-life setting. Assessment of the performance is done using a rubric, or analytic scoring guide to aid in objectivity.

Portfolio	A systematic and organized collection of a student's work that exhibits to others the direct evidence of a student's efforts, achievements, and progress over a period of time. The collection should involve the student in selecting its contents and include information about the performance criteria, the rubric or criteria for judging merit, and evidence of student self-reflection or evaluation. It should include representative work, providing documentation of the learner's performance and a basis for evaluation of the student's progress. Portfolios may include a variety of demonstrations of learning and have been gathered in the form of a physical collection of materials, videos/audios, reflective journals, etc. An ePortfolio is a collection of student work that has been electronically stored providing a chronological account of their learning through a range of artifacts to demonstrate progress toward or achievement of learning outcomes. (Maki, 2010, p. 170).
Program Outcome (*specifically at FSU*)	In addition to SLOs, each educational program at FSU is required to develop, track, and improve Program Outcomes (POs). As opposed to SLOs, which focus on the knowledge and skills that students should learn, POs are non-curricular goals of the academic unit and fall into four categories: • POs focused on the department/program success, such as application and admission rates, student representation, student enrollment, generated credit hours, time-to-degree, awarded degrees or certificates, fundraising, or specialized accreditation. • POs focused on student success, such as student retention, 2-, 4- and 6-year graduation, post-graduation success (employment and/or further studies), or licensure/certification passage rates. • POs focused on a specific dimension of faculty success, such as faculty recruitment and retention, scholarly productivity, instructional output, professional development, student satisfaction with teaching, or awards and accomplishments. • POs directly focused on the University Mission and/or Strategic Plan, such as excellence in research, teaching, creative endeavors, and service (https://www.fsu.edu/about/mission-vision.html) or specific Strategic Plan outcomes (https://strategicplan.fsu.edu/). When choosing new POs and/or improving their assessment processes, departments should select one from the recommended list posted on ipa.fsu.edu.
Reliability	How consistent an assessment instrument performs over time. The instrument should provide similar results over time with similar populations in similar circumstances to be considered ‘reliable’.

Rubric	"A scoring guide: a list or chart that describes the criteria that someone will use to evaluate or grade completed student assignments." (Suskie, 2009, pp. 137). Rubric is an evaluative tool that explicitly represents the performance expectations for an assignment or piece of work. A rubric divides the assigned work into component parts and provides clear descriptions of the characteristics of the work associated with each component, at varying levels of mastery. Rubrics can be used for a wide array of assignments: papers, projects, oral presentations, artistic performances, group projects, etc. Rubrics can be used as scoring or grading guides, to provide formative feedback to support and guide ongoing learning efforts, or both.
Summative Assessment	Summative assessment occurs at the end of the learning process and "is used to give a grade or provide a final measure of students results" (Bailey & Jakicic, p. 14). Summative assessment is comprehensive in nature, provides accountability and is used to check the level of learning at the end of the program. For example, if upon completion of a program students will obtain the knowledge to pass an accreditation test, taking the test would be summative in nature since it is based on the cumulative learning experience. Program-level SLOs often reflect the cumulative nature of the learning that takes place in a program and are therefore assessed at the end of the program to ensure students have met the program-level SLOs.
Validity	An assessment is valid when it accurately reflects the learning it was designed to measure; it measures the desired performance and appropriate conclusions can be drawn from the results.
Value Added	The increase in learning that occurs during a course, program, or undergraduate education. Can either focus on the individual student (how much better a student can write, for example, at the end than at the beginning) or on a cohort of students (whether senior papers demonstrate more sophisticated writing skills – in the aggregate – than freshmen papers). To measure value-added, a baseline measurement is needed for comparison. The baseline measure can be from the same sample of students (longitudinal design) or from a different sample (cross-sectional).
VALUE Rubrics	Developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for program or institutional-level use in evaluating and discussing student learning. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. https://www.usna.edu/Academics/Academic-Dean/Assessment/All_Rubrics.pdf

Appendix B:
Outcomes Typologies and Taxonomies

Five categories of learning outcomes in the Degree Qualifications Profile (DQP; 2014):

1. **Specialized Knowledge** – what students in any specialization should demonstrate with respect to the specialization beyond the vocabularies, theories, and skills of particular fields of study,

2. **Broad and Integrative Knowledge** – students consolidate learning from different broad fields of study (e.g., the humanities, arts, sciences, and social sciences) and discover and explore concepts and questions that bridge them,

3. **Intellectual Skills** – various cognitive skills such as analytic inquiry, use of information resources, engagement with diverse perspectives, ethical reasoning, quantitative fluency, and communicative fluency,

4. **Applied and Collaborative Learning** – this category emphasizes what students can do with what they know. Students are asked to demonstrate their learning by addressing unscripted problems in scholarly inquiry, at work and in other settings outside the classroom. This category includes research and creative activities involving both individual and group effort and may include practical skills crucial to the application of expertise,

5. **Civic and Global Learning** – this category recognizes higher education's responsibilities both to democracy and the global community. Students must demonstrate integration of their knowledge and skills by engaging with and responding to civic, social, environmental, and economic challenges at local, national, and global levels.

Four blocks of Essential Learning Outcomes gained from a liberal education as conceptualized by the Association of American Colleges and Universities:

1. **Knowledge of Human Cultures and the Physical and Natural World**
   - Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

   ***Focused** by engagement with big questions, both contemporary and enduring.*

2. **Intellectual and Practical Skills, including:**
   - Inquiry and analysis
   - Critical and creative thinking
   - Written and oral communication
   - Quantitative literacy
   - Information literacy
   - Teamwork and problem solving

***Practiced extensively**, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance.*

3. **Personal and Social Responsibility, including:**
   - Civic knowledge and engagement – local and global
   - Intercultural knowledge and competence
   - Ethical reasoning and action
   - Foundations and skills for lifelong learning

   ***Anchored** through active involvement with diverse communities and real-world challenges.*

4. **Integrative and Applied Learning, including:**
   - Synthesis and advanced accomplishment across general and specialized studies

   ***Demonstrated** through the application of knowledge, skills, and responsibilities to new settings and complex problems.*

Bloom's Revised Taxonomy of learning in the cognitive domain (Anderson and Krathwohl, 2001):

CATEGORIES AND COGNITIVE PROCESSES	ALTERNATIVE NAMES	DEFINITIONS AND EXAMPLES
1. Remember – Retrieve relevant knowledge from long-term memory		
1.1 Recognizing	Identifying	Locating knowledge in long-term memory that is consistent with presented material (e.g., recognizing the dates of important events in U.S. history)
1.2 Recalling	Retrieving	Retrieving relevant knowledge from long-term memory (e.g., recalling dates of important events in U.S. history)
2. Understand – Construct meaning from instructional messages, including oral, written, and graphic communication		
2.1 Interpreting	Clarifying, paraphrasing, representing, translating	Changing from one form of representation (e.g., numerical) to another (e.g., verbal) (e.g., paraphrasing important speeches and documents)
2.2 Exemplifying	Illustrating, instantiating	Finding a specific example or illustration of a concept or principle (e.g., giving examples of various artistic painting styles)
2.3 Classifying	Categorizing, subsuming	Determining that something belongs to a category (e.g., classifying observed or described cases of mental disorders)
2.4 Summarizing	Abstracting, generalizing	Abstracting a general theme or major point(s) (e.g., writing a short summary of the event portrayed in a video)
2.5 Inferring	Concluding, extrapolating, interpolating, predicting	Drawing a logical conclusion from presented information (e.g., in learning a foreign language, inferring grammatical principles from examples)

2.6 Comparing	Contrasting, mapping, matching	Detecting correspondences between two ideas, objects, and the like (e.g., comparing historical events to contemporary situations)
2.7 Explaining	Constructing models	Constructing a cause-and-effect model of a system (e.g., explaining the causes of important events)
3. Apply – Carry out or use a procedure in a given situation		
3.1 Executing	Carrying out	Applying a procedure to a familiar task (e.g., dividing one whole number by another whole number, both with multiple digits)
3.2 Implementing	Using	Applying a procedure to an unfamiliar task (e.g., using Newton's Second Law in appropriate situations)
4. Analyze – Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose		
4.1 Differentiating	Discriminating, distinguishing, focusing, selecting	Distinguishing relevant from irrelevant parts or important from unimportant parts of presented material (e.g., distinguishing between relevant and irrelevant numbers in a mathematical word problem)
4.2 Organizing	Finding coherence, integrating, outlining, parsing, structuring	Determining how elements fit or function within a structure (e.g., structuring evidence in a historical description into evidence for and against a particular historical explanation)
4.3 Attributing	Deconstructing	Determining a point of view, bias, values, or intent underlying presented material (e.g., determining the point of view of the author of an essay in terms of their political perspective)
5. Evaluate – Make judgments based on criteria and standards		
5.1 Checking	Coordinating, detecting, monitoring, testing	Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented (e.g., determining if a scientist's conclusions follow from observed data)
5.2 Critiquing	Judging	Detecting inconsistencies between a product and external criteria; determining whether a product has external consistency; detecting the appropriateness of a procedure for a given problem (e.g., judging which of two methods is the best way to solve a given problem)
6. Create – Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure		
6.1 Generating	Hypothesizing	Coming up with alternative hypotheses based on criteria (e.g., generating hypotheses to account for an observed phenomenon)
6.2 Planning	Designing	Devising a procedure for accomplishing some task (e.g., planning a research paper on a given historical topic)
6.3 Producing	Constructing	Inventing a product (e.g., building habitats for a specific purpose)

Some additional learning outcomes that have gained more interest recently and are becoming incorporated into curriculum and assessment of educational programs across the country are described below.

Professionalism: a set of behaviors, attitudes and habits of mind required to carry out professional responsibilities (Suskie, 2018). In the higher education setting, professionalism can be demonstrated through coming to class and meetings on time, engaging in oral and written communication that is formal, respectful, and timely, correctly following assignment instructions, participating in group work and class discussions, and giving a task one's best effort.

Habits of Mind: dispositions toward behaving intelligently when confronted with complex problems (The Institute for Habits of Mind). Some of the 16 attributes of what students can do when they behave intelligently include persisting, managing impulsivity, listening to others with understanding and empathy, striving for accuracy and precision, thinking interdependently, taking responsible risks, and learning continuously.

Metacognition: thinking about one's thinking – planning, monitoring, and assessing one's understanding and performance (Chick, 2013). Students practice and exhibit metacognition when they verbalize what it means to learn, when they show "awareness of one's strengths and weaknesses with specific skills or in a given learning context, plan what's required to accomplish a specific learning goal or activity, identifying and correcting errors, and preparing ahead for learning processes."

Appendix C:
Bloom's Taxonomy Action Verbs from Stanny (2016)

Knowledge	Understand	Apply	Analyze	Evaluate	Create
arrange	articulate	act	analyze	appraise	arrange
choose	associate	adapt	appraise	argue	assemble
cite	characterize	apply	break	arrange	categorize
copy	cite	back/back up	break down	assess	choose
define	clarify	calculate	calculate	attach	collect
describe	classify	change	categorize	choose	combine
draw	compare	choose	classify	compare	compile
duplicate	contrast	classify	compare	conclude	compose
identify	convert	complete	conclude	contrast	construct
indicate	defend	compute	contrast	core	create
label	demonstrate	construct	correlate	counsel	design
list	describe	demonstrate	criticize	create	develop
locate	differentiate	develop	debate	criticize	devise
match	discuss	discover	deduce	critique	estimate
memorize	distinguish	dramatize	detect	decide	evaluate
name	estimate	employ	diagnose	defend	explain
order	explain	experiment	diagram	describe	facilitate
outline	express	explain	differentiate	design	formulate
quote	extend	generalize	discover	determine	generalize
read	extrapolate	identify	discriminate	discriminate	generate
recall	generalize	illustrate	dissect	estimate	hypothesize
recite	give	implement	distinguish	evaluate	improve
recognize	give examples	interpret	divide	explain	integrate
record	identify	interview	evaluate	grade	invent
relate	illustrate	manipulate	examine	invent	make
repeat	indicate	modify	experiment	judge	manage
reproduce	infer	operate	figure	manage	modify
review	interpolate	organize	group	mediate	organize
select	interpret	paint	identify	prepare	originate
state	locate	practice	illustrate	probe	plan
tabulate	match	predict	infer	rate	predict
tell	observe	prepare	inspect	rearrange	prepare
underline	organize	produce	inventory	reconcile	produce
write	paraphrase	relate	investigate	release	propose
	predict	schedule	order	rewrite	rate
	recognize	select	organize	select	rearrange
	relate	show	outline	set up	reconstruct
	report	simulate	point out	supervise	relate
	represent	sketch	predict	synthesize	reorganize
	restate	solve	prioritize	test	revise
	review	translate	question	value	rewrite
	rewrite	use	relate	verify	role-play
	select	utilize	select	weigh	set up
	summarize	write	separate		specify
	tell		solve		summarize
	translate		subdivide		synthesize
			survey		tell/tell why
			test		write

Appendix D:
Curriculum x SLOs Alignment

Below are some curriculum mapping best practices and considerations, including guidelines for programs with special circumstances (Suskie, 2018):

- **Keep the curriculum map 'lean' and focused**. Complicated, sprawling curriculum pathways with a myriad of course options may be an obstacle to ensuring that students complete their programs of study on time and have mastered the most important content and skills. Construct curriculum maps with clear routes to achieving target SLOs with most learning outcomes addressed in 2-4 required courses/learning experiences.

- **Only mark intersection cells if a part of the final course grade is based on progress toward achieving the SLO**. Most students focus their time and efforts on the graded course components. So, if a course, for example, reinforces students' oral communication, but these skills are not graded or assessed in any other way, do not place the 'R' code in that intersection point in the map.

- **Electives have no place in a program curriculum map**. Elective courses should not be included in the map because they are not taken by every student in the program. Even though electives may support development of some SLOs, it's the required courses/experiences that ensure that all students have sufficient opportunity to achieve key learning outcomes.

- **Group clusters of 'pick-from-a-list' courses together in one column**. Some educational programs require students to take one out of a cluster of two or more courses. If all courses in a cluster support the same SLO(s), group them together as shown in the curriculum map below. If all or some courses in a required curricular cluster address different SLOs, you may treat them as electives and exclude them from the map, or you may still include them if they all provide students with additional learning activities that further introduce (I), reinforce (R) or help master (M) program SLOs.

	Curriculum Elements					
			Course Cluster 1 (Students Select One Course)			
	Introductory Course XXX2000	Research Methods Course XXX3000	Advanced Content Course A XXX3000	Advanced Content Course B XXX3000	Lab / Practicum XXX4000	Capstone Course XXX4999
SLO #1: Disciplinary Knowledge Base	I		R, M	R, M	M	M*
SLO #2: Disciplinary Methods		I	R	R	M	R, M*
SLO #3: Disciplinary Applications	I		R	R	R, M	R, M*

- **Multi-course/multi-instructor**. When different instructors teach different courses in the same course cluster as shown above, it is a good idea for them to collaborate on creating a shared core package. Elements of the shared curricular core may include a series of the same in-class activities and/or homework assignments, a final paper with the same prompt or the same set of ten questions incorporated into each course's midterm ('shared/embedded questions'), or a standard 'grading' rubric applied to different class projects. The most important consideration here is to ensure that even though the syllabi and class materials may be different, students get a chance to develop the same learning outcome(s) regardless of which exact course in the cluster they chose.

- **Multi-section/multi-instructor**. When multiple instructors teach different sections of the same course, the program should establish a common course syllabus with shared course learning activities and same assignments. An educational program can take it a step further and develop a standard course package that includes a stock syllabus, lecture slides, class activities, tests and quizzes, and a gradebook. This approach is especially useful for courses whose sections are typically taught by different instructors most years/semesters (e.g., graduate teaching assistants, adjunct faculty, visiting scholars).

- **Multi-'path' programs**. It is common for a single degree program to have multiple paths to the same credential. For example, FSU students can receive a doctorate in Educational Psychology (degree program with CIP 422806) by completing coursework in either one of its two offered majors: Learning and Cognition (major code 220306) or Sports Psychology (major code 220312). (See FSU Degree Program Inventory for more details regarding institutional academic structure.)

  In these cases, some SLOs may be developed and assessed in the shared core courses, while some other SLOs may be developed and assessed in courses that are specific to one major. It is possible to have one or two SLO(s) that are not shared among the different 'paths' (majors; degree types: MFA vs. MA; concentration tracks: thesis/research track vs. non-thesis/professional track). It is ultimately up to the program faculty to jointly decide if the 'paths' under the single degree program are so distinct from each other that a separate set of SLOs and a separate curriculum map are warranted.

Appendix E:
Checklist, Rating Scale, and Holistic Rubrics

A **Checklist** rubric is "a list of traits that should be present in student work. It does not assess the frequency or quality of those traits." (Suskie, 2018, p. 190) Checklist rubrics typically require instructors to indicate whether a student demonstrated specific knowledge, skills, and values/attitudes in a yes-or-no format. As such, checklists can be used to evaluate whether a student has followed a particular procedure like safety protocol during a lab experiment, or for allowing students to self-assess before submitting a completed assignment, or for quickly marking presence of essential elements in submitted work. The checklist rubric example shown below can be used to assess oral communication and presentation SLO that students have a chance to demonstrate during an in-class presentation of their research paper.

Oral Communication & Presentation SLO Checklist	Yes	No
Used time at an even pace, completing all sections of the presentation	✓	
Flow of presentation was logical and smooth	✓	
Used non-text elements (graphs, images, audio/video, etc.)		✓
Used different mediums to present information (slides, printed hand-outs, physical objects, etc.)	✓	
Made eye contact with audience	✓	
Varied voice to suit presentation	✓	
Used non-verbal communication (gestures, facial expressions, body language, etc.)	✓	
Presented themselves in professional way in dress and grooming		✓

Rating scales build upon the checklist rubrics by adding a quality scale for each assessed criterion (trait, element, dimension, attribute, facet). Rating scales list each measured criterion as a separate row and include a simple numeric and/or descriptive scale for performance levels across as column headers. In the example below, medical students' Professionalism SLO is assessed using a rating scale rubric with 18 specific behaviors that exemplify professionalism in a medical field and 4 levels of performance. Medical faculty can observe their students during simulated or real-life interactions with patients and rate students' Professionalism-related knowledge, skills, and values/attitudes.

Elements	Exceeds Expectations (3 points)	Meets Expectations (2 points)	Below Expectations (1 point)	Unacceptable (0 points)	Not Applicable
Listened actively to patient.	✓				
Showed interest in patient as a person.	✓				

Recognized and met patient needs.	✓				
Extended themselves to meet patient needs.	✓				
Ensured continuity of patient care.					✓
Advocated on behalf of patient.		✓			
Demonstrated awareness of own limitations			✓		
Admitted errors/omissions.			✓		
Solicited feedback.		✓			
Accepted feedback.			✓		
Maintained appropriate boundaries.		✓			
Was on time.	✓				
Completed tasks in a reliable fashion.	✓				
Addressed own gaps in knowledge and/or skills.			✓		
Was available to colleagues.	✓				
Avoided derogatory language.		✓			
Maintained patient confidentiality.	✓				
Used health resources appropriately.	✓				
TOTAL	27 POINTS	8 POINTS	4 POINTS	0 POINTS	
AVERAGE	39 POINTS / 17 APPLICABLE ELEMENTS = 2.29 POINTS				

The drawback to rating scales is that it may be unclear what each quality level means, which may lead to inconsistencies in how different instructors rate performance. Adding clear descriptions of what each level on the scale represents can help diminish rating discrepancies and the effect of various biases.

Holistic rubrics offer an intermediate solution between rating scales and analytic rubrics (discussed next). They provide detailed descriptions of expected student performance for each achievement level but do not allow for scoring of each individual aspect of the completed assignment. These rubrics work well for papers and essays. The rubric below can be used to assign a specific number of points and an overall grade to student essays of varying overall quality levels.

Grade	Score	Performance Level Description
A	90-100	The “A” argument essay is exceptional in every way. The essay is well organized, and all claims are supported. It begins with a solid introduction that contains a clear thesis, is followed by body paragraphs that contain clear topic sentences with clear and detailed support and ends with an effective conclusion. Content is thorough and lacking in no area. There are no (or few) errors in tone, format, mechanics, grammar, and content.
B	80-89	The “B” essay is above adequate in most areas. In the areas where it is not above adequate, it is still entirely acceptable. Most of the essay is clear, focused, and well detailed, but there may be a few areas requiring further development. While it may contain a few errors with tone, mechanics, grammar, and/or content, these errors are not egregious enough to detract from the overall point being made.
C	70-79	The “C” essay is adequate in most areas, but exceptional in none. The thesis is clear although probably lacking in both control and command. Organization may be a slight problem but can be fixed. The paragraphs provide support but are generally underdeveloped. There may be multiple errors in tone, format, mechanics, grammar, and content, but these errors do not, for the most part, detract from the overall writing.
D	60-69	The “D” essay is lacking in many areas. It is generally unorganized and unfocused. The thesis is neither clear nor controls the entire essay. Most of the essay is underdeveloped. There are frequent errors in tone, format, mechanics, grammar, and/or content that distract from the content being provided. Its only saving grace is that, despite all the errors, the writer seems to put forth a legitimate effort.
F	0-59	The “F” essay generally needs little explanation. There are significant problems throughout. The thesis is often lacking, and the argument, if there is one, wanders and is unorganized. The essay shows no understanding of basic essay structure, and there are significant errors in tone, format, mechanics, grammar, and/or content. The effort on the part of the writer is questionable, at best.

While holistic rubrics move beyond simple ratings and provide descriptive expectations, they are not ideal for assessing individual SLOs. “The major purpose of such placement assessments is not to give feedback to individual students or to identify strengths and weaknesses in student learning but to make decisions within a tight timeframe.” (Suskie, 2018, p. 192). For assessing individual SLOs, an analytic rubric is ideal.

Appendix F:
Content Knowledge Exam Points Table

	Q1: History & Theory of Modernism(s)	Q2: Avant-Gardism	Q3: Post-modernism(s)	Q4: Art & Globalization	Q5: Concept of Artistic Practice	Q6: Authorship	Q7: Photography & Moving-Image	Q8: Performance Art	Q9: Digital Art	Q10: Participatory Art	**Total Test Points**	**Test Grade**
Student 1	1	1	1	1	1	1	1	0	1	1	9	A
Student 2	1	1	1	1	1	1	1	1	1	1	10	A
Student 3	1	1	1	0	1	1	1	1	1	1	9	A
Student 6	1	1	1	1	1	0	1	1	1	1	9	A
Student 7	1	1	1	1	1	1	1	1	1	1	10	A
Student 8	1	0	1	1	1	1	1	1	1	1	9	A
Student 12	1	0	1	1	1	1	1	1	1	1	9	A
Student 14	1	1	1	1	1	1	1	1	1	1	10	A
Student 17	1	1	1	1	0	1	1	1	1	1	9	A
Student 18	1	1	1	1	1	1	1	1	1	1	10	A
Student 19	1	1	1	1	1	1	1	1	1	1	10	A
Student 22	1	1	1	1	0	1	1	1	1	1	9	A
Student 25	1	1	1	1	1	1	1	1	1	1	10	A
Student 26	1	1	0	1	1	1	1	1	1	1	9	A
Student 28	1	1	1	1	0	1	1	1	1	1	9	A
Student 29	1	1	1	1	1	0	1	1	1	1	9	A
Student 35	1	1	1	1	1	1	1	1	1	1	10	A
Student 36	1	1	1	1	1	1	1	1	1	1	10	A
Student 38	1	1	1	1	1	1	1	1	1	1	10	A
Student 40	1	1	1	1	0	1	1	1	1	1	9	A
Student 41	1	1	1	1	1	1	1	1	1	1	10	A
Student 46	0	1	1	1	1	1	1	1	1	1	9	A
Student 48	1	1	1	1	1	1	1	1	1	1	10	A
Student 49	1	1	1	1	1	1	1	1	0	1	9	A
Student 50	1	1	1	1	1	1	1	1	1	1	10	A
Student 4	1	1	0	1	1	1	1	0	1	1	8	B
Student 11	0	1	1	1	0	1	1	1	1	1	8	B
Student 15	1	1	0	1	1	1	1	0	1	1	8	B
Student 16	0	0	1	1	1	1	1	1	1	1	8	B
Student 24	1	1	1	1	0	1	1	1	1	0	8	B
Student 31	1	1	1	1	0	0	1	1	1	1	8	B
Student 33	1	0	1	1	0	1	1	1	1	1	8	B
Student 34	1	1	1	1	1	1	1	0	0	1	8	B
Student 37	1	1	1	1	0	1	1	0	1	1	8	B
Student 42	1	1	1	1	0	0	1	1	1	1	8	B
Student 44	1	1	0	1	0	1	1	1	1	1	8	B
Student 45	1	1	1	1	0	0	1	1	1	1	8	B
Student 10	1	1	1	1	1	0	1	1	0	0	7	C
Student 21	0	1	0	1	1	0	1	1	1	1	7	C
Student 27	1	0	1	1	0	1	1	0	1	1	7	C
Student 43	0	1	1	0	1	1	1	1	1	0	7	C
Student 47	0	0	1	1	0	1	1	1	1	1	7	C
Student 5	1	0	1	1	0	0	1	0	1	1	6	D
Student 9	0	0	1	1	0	1	1	1	1	0	6	D
Student 13	1	1	1	1	0	0	1	0	0	1	6	D
Student 23	0	1	0	0	0	1	1	1	1	1	6	D
Student 30	0	0	1	1	1	1	1	1	0	0	6	D
Student 39	1	0	1	1	0	1	1	1	0	0	6	D
Student 20	0	0	0	0	0	0	1	0	0	0	1	F
Student 32	0	1	0	0	0	1	1	1	1	0	5	F
	39	**39**	**42**	**45**	**29**	**40**	**50**	**41**	**43**	**42**	**8.2**	**B**
	Total Correct Answers to Each Exam Question Testing Specific Topics										**Class Average**	

Appendix G:
Example Student Learning Outcome Report
Bachelor's Degree in Psychology

- Provide a succinct name for the SLO:

  SLO Name: SLO - Application and Interpretation of Statistical Tests.

- Identify what knowledge, skills, and/or values/attitudes students will have learned:

  SLO Statement: Upon completion of Research Methods in Psychology (PSY3213C), the students will be able to choose the appropriate statistical test for a particular research design and interpret the results of statistical tests.

- Assign proper categorization for the SLO (select one of the following: Discipline/Content Knowledge and Skills, Communication Skills, Critical Thinking Skills):

  SLO Category: Discipline/Content Knowledge and Skills.

- Describe how the assessment of the SLO will be conducted (who will assess student learning, in which course(s), during which semester(s), under what circumstances, and how the assessment instrument will be used):

  Assessment Process: We will assess this outcome by testing students in all sections of PSY3213C (Research Methods in Psychology) offered during the academic year (Fall and Spring). PSY3213C course is the core research methodology course for students who major in Psychology. To assess this learning outcome, we will use a final exam that was written and is curated by our program faculty. The exam has strong content validity and reliability as was established by the Undergraduate Studies Committee for the Psychology Department. The entire final exam consists of 50 multiple-choice questions, each worth one point. 15 questions out of 50 test students learning of the 'Application and Interpretation of Statistical Tests' outcome.

- Specify a measurable assessment standard that defines success:

  Goal/Benchmark: By the end of the Research Methods in Psychology (PSY3213C) course, at least 75% of students majoring in Psychology will achieve mastery on the SLO by correctly answering at least 12 out of 15 final exam questions (80%) testing this learning outcome.

- Provide information about the assessment instrument:

  Assessment Instrument: Instructor-constructed exam.

- Present information regarding the levels at which the SLO was achieved:

  Results Statement: 280 out 342 (81.9%) students majoring in Psychology and enrolled in the Research Methods in Psychology (PSY3213C) course in Fall 2019 and Spring 2020 correctly answered at least 12 out of 15 final exam questions testing this SLO. The standard for success set for the 'Application and Interpretation of Statistical Tests' SLO to have at least 75% of students achieve acceptable level of mastery has been met.

- Examine the reason(s) for the attained results:

  Analysis of Results: Compared to last year's results (78.2%), this year, a greater proportion of Psychology majors achieved mastery on this SLO. We hypothesize that the increase was due to improving the instructional materials for, and pedagogical approaches to, teaching how to choose the appropriate statistical test for different research questions. This topic was the most problematic for students last year as was evidenced by the comparatively lower number of correct answers to the two exam questions that were focused on this topic. This year, more students correctly answered these two exam items.

  We also noticed that there were a couple test items whose difficulty levels were very low. Over 92% of majors responded correctly to questions #17 and #25 (choosing correct definition for a t-test and for a correlation test). The item difficulty analysis confirmed that these two exam questions were too easy for our students. We think this is likely because they both measure lower levels of learning in the Bloom's taxonomy (knowledge and understanding) and because the main lecture part of the course and the lab part of the course that cover t-test and correlation analyses are of high instructional quality.

- Describe specific new and/or different actions to improve or sustain performance.

  We will implement the following enhancements:

  First, even though the SLO threshold (75% of students) has been consistently achieved for the last four academic years, academic program faculty and the curriculum committee decided against increasing it to a higher threshold. Instead, we decided to redesign the 'easy' exam questions to test higher levels of learning. Specifically, exam items #17 and #25 will be modified to test middle levels of Bloom's taxonomy (application and analysis). We plan to deploy the redesigned exam during the upcoming academic year.

  To better prepare our students for a higher level of learning, we changed one in-class activity and modified one homework assignment. Now, in addition to teaching students what a t-test and a correlation test are, we want them to be able to apply this knowledge to analyze and interpret results of these two statistical tests.

Appendix H:
Recommended Program Outcomes and Their Assessment

CATEGORY I:

Outcomes focused on the **department/program success**, such as application and admission rates, student representation, student enrollment, generated credit hours, time-to-degree, awarded degrees or certificates, fundraising, specialized accreditation.

OPTION A: CERTIFICATE ENROLLMENT

- **PO Name**: PO - Certificate Enrollment.
- **PO Statement**: The program will increase the number of students enrolled in the Global Citizenship Certificate.
- **PO Assessment Plan**: Enrollment data are aggregated per academic year, defined as Summer C, Fall, and Spring. Each semester, enrollment data will be gathered from the "Student Academic Plan Summary" dashboard in the FSU Oracle Business Intelligence platform. This data will be validated against registration into the Global Citizenship Certificate Canvas site, in which students are enrolled and removed by the program director following admission to the program. The program director has responsibility for reporting enrollment data.
- **PO Numeric Target**: Our target is a 5% increase in students enrolled in the program per year, with a baseline enrollment of 349 students in 2019-2020 academic year.

OPTION A: DEGREE ENROLLMENT

- **PO Name**: PO - Degree Program Enrollment.
- **PO Statement**: The number of students enrolled in the Statistics master's program will be maintained at high level.
- **PO Assessment Plan**: For this Program Outcome, we will track our undergraduate student enrollment in the fall and, separately, in the spring term of every academic year. Enrollment data will be gathered from the student enrollment dashboard available at the Office of Institutional Research website at: https://ir.fsu.edu/enrollment.aspx. Only degree-seeking master's students majoring in statistics and statistical data science will be included in the degree program enrollment count for each term. The graduate program director will report the enrollment data and will be responsible for arranging the department discussion about the observed enrollment trends.
- **PO Numeric Target**: Our aspirational goal is to maintain high program enrollment. At minimum, our goal is to never have more than 5% decrease in the number of enrolled master's students in any term-over-term comparison.

OPTION B: CERTIFICATES AWARDED

- **PO Name**: PO - Number of Granted Certificates.
- **PO Statement**: By the end of each year, the program will award at least 20 graduate certificates in Information Architecture.
- **PO Assessment Plan**: The certificate program director will monitor progress towards the target through a two-part process. First, the list of students with granted certificates for the reporting year (Summer, Fall, and Spring) will be pulled from the University's Oracle Business Intelligence dashboard entitled "Graduation Analysis". We will use the academic plan "Information Architecture" to identify our certificate completers. Second, the certificate program director will

validate the count using internal records (e.g., certificate completion forms submitted by the students to the dean's office). Data reports will be presented to, and discussed with, program faculty and leadership to evaluate results and formulate strategies for improvement for next year.

- **PO Numeric Target**: Our goal is for at least 20 students to complete the certificate requirements each reporting year.

OPTION B: DEGREES AWARDED

- **PO Name**: PO - Number of Granted Degrees.
- **PO Statement**: The number of degrees awarded by the program will be higher than or on par with the previous year.
- **PO Assessment Plan**: Information about the number of bachelor's degrees awarded by our program will be obtained from the Departmental Dashboards created by the Office of Institutional Research and available at: https://ir.fsu.edu/resources.aspx . The Degrees Granted table is at the bottom of the second page of the report. We will use the CIP Code 11.0101 – Computer and Information Sciences to identify our Computer Science bachelor's graduates. The count of degrees will be based on an academic year defined as Summer, Fall, Spring. The annual data is available the following year, so the reporting process will reflect that: for example, 2021-2022 summer, fall, spring degrees granted data will become available in spring of 2023 and thus will be included in the IE Portal under the 2022-2023 reporting year. Data reports will be presented to, and discussed with, program faculty and leadership to evaluate results and formulate strategies for improvement for next year. The undergraduate program director will monitor and report on the annual program enrollment.
- **PO Numeric Target**: Our aspirational goal is to award a higher number of bachelor's degrees than in the previous year. At minimum, our goal is to never drop below 5% fewer degrees in any year-over-year comparison.

OPTION C: CERTIFICATE TIME-TO-COMPLETION

- **PO Name**: PO - On-Time Certificate Completion.
- **PO Statement**: Ensure that certificate enrollees complete the program within appropriate time frame.
- **PO Assessment Plan**: For this PO, we will track the number of students who enroll in the certificate program as well as the number of students who earn the certificate within one year of enrollment. To calculate the completion rate, we will take the number of students who earn the certificate in a given academic year (defined as Summer, Fall, Spring) and divide it by the total number of students in the original cohort. For example, if we have a total of 10 students enroll in the certificate program in Summer 2022, Fall 2022 and Spring 2023, we will consider our goal met if 9 out of these 10 students complete the coursework and earn the certificate in Summer 2023, Fall 2023 and Spring 2024. When a student completes their course work for the certificate program, they are required to fill out a certificate completion survey housed on the Jim Moran College of Entrepreneurship website. The data from this survey will be gathered by the current graduate program coordinator for JMCE at the end of each semester and will be aggregated for the reporting year.
- **PO Numeric Target**: Our goal is to have at least 90% of all students who enroll in the program earn the certificate within one year.

OPTION C: DEGREE TIME-TO-COMPLETION

- **PO Name**: PO - Doctoral Milestones.
- **PO Statement**: Doctoral students will progress in the Chemistry program at adequate pace.
- **PO Assessment Plan**: For this PO, we will track how many of our doctoral students progress from matriculation to graduation within six years, which is the expected program duration. To calculate the completion rate, we will take the number of students who earn their doctorate in a given academic year (defined as Summer, Fall, Spring) and divide it by the total number of students in the original cohort from six years ago. For example, if we have a total of 20 students enroll in the doctoral program in Summer 2015, Fall 2015 and Spring 2016, we will consider our goal met if 18 out of these 20 students complete the program and earn their degree by the end of Spring 2021. The graduate program coordinator will request the data for this PO at the end of each academic year from FSU Office of Institutional Research. The report will be presented and discussed at departmental faculty meeting at the end of August.
- **PO Numeric Target**: Our goal for every year is that at least 90% of doctoral students in a cohort will graduate with their doctorate in Chemistry within 6 years from the matriculation point.

CATEGORY II:

Outcomes focused on **student success**, such as student retention, 2-, 4- and 6-year graduation, post-graduation success (employment and/or further studies), licensure/certification passage rates.

OPTION A: TRANSFER GRADUATION RATE

- **PO Name**: PO - 3-Year Transfer Students Graduation Rate.
- **PO Statement**: Transfer students in the Criminology program will graduate from FSU within three years at a higher rate.
- **PO Assessment Plan**: We will track 3-year graduation rates of undergraduate students who transferred to FSU from the Florida College System (FCS) and declared Criminology as their major. FCS transfer students already have an Associate's degree and should be able to graduate with a Bachelor's degree from FSU in three years. 3-year grad rate is calculated by dividing the number of transfer students who graduated from FSU by the end of their third year by the total number of transfer students in the original cohort. Graduation rate data will be obtained from the Departmental Dashboards created by the Office of Institutional Research and available at: https://ir.fsu.edu/resources.aspx . The FCS Transfer Students' grad rates table and graph are in the middle of the third page of the report. We will use the CIP Code 43.0104 – Criminal Justice/Safety Studies to identify the graduates for this Program Outcome. Full methodology is described on the first page of the report.
- **PO Numeric Target**: According to the most recent available data, the 2019 FCS transfer student cohort had 3-year grad rate of 77% (118 out of 153 students). Over the next five years, beginning with the 2020 FCS transfer student's cohort, we want to increase the 3-year graduation rate by at least 1 percentage point annually.

OPTION A: BACHELOR'S GRADUATION RATE

- **PO Name**: PO - 4-Year Graduation Rate.
- **PO Statement**: Full-time FTIC students in the Psychology program will graduate from FSU within 4 years at a high rate.
- **PO Assessment Plan**: We will track 4-year graduation rates of full-time first-time-in-college (FTIC) undergraduate students who declared Psychology as their major in their first fall at FSU. 4-year graduation rate is calculated by dividing the number of students who graduated from FSU

by the end of their fourth year by the total number of students in the original cohort. Graduation rate data will be obtained from the Departmental Dashboards created by the Office of Institutional Research and available at: https://ir.fsu.edu/resources.aspx . The full-time FTIC students' 4-year grad rates table and graph are at the top of the third page of the report. We will use the CIP Code 42.0101 – Psychology, General to identify the graduates for this Program Outcome. Full methodology is described on the first page of the report.

- **PO Numeric Target**: According to the most recent available data, 2018 cohort full-time FTIC students who declared Psychology as their first fall major had 4-year grad rate of 77% (274 out of 355 students). Our goal is to increase the 4-year graduation rate to at least 80% and maintain it no lower than that for the next 5 years.

OPTION B: POST-GRADUATION OUTCOMES

- **PO Name**: PO - Professional Employment and Postgraduate School.
- **PO Statement**: Upon completion of the Bachelors in Finance program, students will obtain employment in financial planning or other fields or continue in graduate study.
- **PO Assessment Plan**: Graduating seniors will complete the Graduating Senior Survey (GSS), which is administered by the FSU Office of Institutional Research. The GSS collects information about students' postgraduate employment and the pursuit of further education. These data will be retrieved from the post-graduation outcomes report published by FSU's Office of Institutional Research at https://www.ir.fsu.edu/postgrad_outcomes/gss/gss_2021.aspx . As data is available in the year following graduation, reporting for each graduating cohort will occur in the next year: for example, 2020-2021 fall, spring, summer graduates' data will become available in spring/summer of 2022 and thus will be included in the IE Portal under the 2021-2022 reporting year.

  The sum of the total number of students who indicate that "Employment" is their Primary Plan following graduation and have secured positions and the total number of students who indicate that "Education" is their Primary Plan following graduation and have been admitted to any type of future degree program will be divided by the total number of program graduates who applied for employment or further study. Full methodology is described on the last page of the linked report.
- **PO Numeric Target**: We will consider that we have met our standard when at least 75% of graduating seniors have found professional employment or been accepted to graduate/professional schools at graduation and/or within 3 months of graduation.

CATEGORY III:

Outcomes focused on a specific dimension of **faculty success**, such as faculty recruitment and retention, scholarly productivity, instructional output, professional development, student satisfaction with teaching, awards, and accomplishments.

OPTION A: SCHOLARLY PRODUCTIVITY

- **PO Name**: PO - Faculty Research.
- **PO Statement**: Department faculty will produce scholarship at or above the level of their peers.
- **PO Assessment Plan**: Every year, before the Fall semester, we will compare how our faculty research output compares to that of their peers in public R1 institutions. We will use the departmental dashboards prepared by the FSU Office of Institutional Research and posted on their website at https://ir.fsu.edu/resources.aspx . Data for this Program Outcome is displayed under the 'Faculty Productivity Radar & Quintiles' tab.

The table shows peer scholarly productivity on various metrics such as articles, awards, books, citations, grants, grant dollars, and conference proceedings. The peer faculty are grouped into five quintiles based on their average scholarly productivity for each metric. The quintile bar graph shows the number and rank of our department faculty whose scholarly productivity places them in a particular national quintile. Our goal is to have more of our faculty place in top 3 national quintiles.

As data from Academic Analytics requires time to prepare, reporting for faculty on each fall roster will occur in the next year: for example, data for faculty who were included in the fall 2021 roster submitted to Academic Analytics will become available in spring 2023 and thus will be included in the IE Portal under the 2022-2023 reporting year.

- **PO Numeric Target**: More than half of faculty members will have produced scholarly work at the level that would place them in quintiles 1, 2 or 3.

CATEGORY IV:

Outcomes directly focused on **the University Mission and/or Strategic Plan,** such as excellence in research, teaching, creative endeavors, and service (https://www.fsu.edu/about/mission-vision.html) or specific Strategic Plan outcomes (https://strategicplan.fsu.edu/).

OPTION A: EXCELLENCE IN TEACHING

- **PO Name**: PO - Participation in Workshops on Teaching.
- **PO Statement**: Departmental faculty will continue to improve their pedagogical expertise.
- **PO Assessment Plan**: Every year, before the Fall semester, we will collect information from our instructional faculty about their participation in the workshops and seminars offered by the FSU Center for the Advancement of Teaching (CAT). The list of these events is provided at: https://teaching.fsu.edu/workshops-seminars/ . Only faculty with teaching responsibilities will be included in this effort. The Assistant Chair will be in charge of communicating with the faculty and aggregating information received from them.
- **PO Numeric Target**: At least 75% of departmental instructional faculty will participate in at least one workshop per year (Summer, Fall, Spring). This target may be increased in future years.

Appendix I:
FSU Strategic Plan Goals and Initiatives and Their Alignment

The 5 Goals and 15 Objectives/Initiatives of the 2023-2027 FSU Strategic Plan are:

Goal #	Objectives/Initiatives
I	**RESEARCH AND ACADEMIC EXCELLENCE** **Expanding Research and Academic Excellence**
I.1	Increase the Recruitment, Development, and Retention of High-Impact Faculty
I.2	Catalyze Translational Scholarship, Arts, and Research
I.3	Expand and Promote the Arts, Performance, Humanities, and Creative Activities
I.4	Build upon and Create Graduate Opportunities
II	**STUDENT SUCCESS** **Ensuring Student Success on Campus and Beyond**
II.1	Enhance Curricular Practices for Engaged Learning and Robust Outcomes
II.2	Create an Environment That Encourages Healthy Behaviors and Wellness
II.3	Expand and Strengthen Academic Advising and Student Support Services
II.4	Bolster Students' Co-Curricular and Career Development Opportunities
III	**ENTREPRENEURIAL SPIRIT** **Nurturing and Inspiring FSU's Entrepreneurial Spirit**
III.1	Cultivate a Creative, Innovative, and Entrepreneurial Ecosystem
III.2	Commercialize Creative, Innovative, and Entrepreneurial Endeavors
IV	**INCLUSIVE EXCELLENCE** **Committing to Inclusive Excellence and Civil Discourse**
IV.1	Create Rich Experiences and Opportunities for All Populations
IV.2	Increase International Engagement and Cultural Competencies for Students, Faculty, and Staff
V	**INSTITUTIONAL BRAND EXCELLENCE** **Enhancing Our Brand to Reflect Institutional Excellence**
V.1	Focus the FSU Brand to Bolster Our Reputation
V.2	Leverage Diversified Financial Resources to Invest in Institutional Excellence
V.3	Become a National Leader in Operational Excellence
	STRATEGIC OPPORTUNITIES
	Positioning ourselves for membership in the Association of American Universities (AAU)
	FSU Health will improve health outcomes and change lives

Examples of different POs' alignment with the Initiatives of the FSU Strategic Plan.

	I.1	I.2	I.3	I.4	II.1	II.2	II.3	II.4
PO – Promote a more ambitious student course load							Y	
PO – Improve community engagement and outreach		Y						
PO – Create a better system for tracking faculty creative activity			Y					
PO – Attract a larger and more diverse pool of applicants to the master's/doctoral program				Y				
PO – Improve tenured and tenure track faculty retention	Y							
PO – Expand departmental participation in the Early Alert program						Y		
PO – Expand participation in the Learning Assistants program					Y			
PO – Student participation in internships will increase								Y

	III.1	III.2	IV.1	IV.2	V.1	V.2	V.3	S.O.
PO – Grow number of postdoctoral scholars								Y
PO – Increase number of students enrolled in Entrepreneurship courses	Y							
PO – Establish and maintain strong and positive social media presence					Y			
PO – Strengthen departmental support for commercialization activities		Y						
PO – Offer more fundraising events						Y		
PO – Increase participation in the Search Committee training			Y					
PO – Promote student participation in FSU's Study Abroad program				Y				
PO – Implement the recommendations of the Classroom Space Optimization Committee							Y	