ASSESSMENT to go → **Program outcomes assessment**

Program Learning Outcomes

Questions to assess program learning outcomes (PLOs)
- ☐ Do the PLOs describe the essential knowledge, skills, and dispositions expected of graduates of the program?
- ☐ Do the PLOs distinguish the program from other programs on campus?
- ☐ Do PLOs describe the observable behaviors by which students will demonstrate learning?
- ☐ Do the PLOs reflect Bloom's Revised Taxonomy (http://assessment.ucdavis.edu/local_resources/toolkit/Bloom.pdf)?
- ☐ Are the performance criteria explicit and transparent? Are there benchmarks / targets?

> For more information about articulating your expectations for student learning, see: http://assessment.ucdavis.edu/how/plan.html#PlanStep2.

Curriculum Maps

The analytic process during which faculty examine the alignment between program learning outcomes and curricula is usually called **curriculum mapping**; its end product is a graphic representation called a curriculum map or matrix.

> For more information about developing a curriculum map/matrix, see: http://assessment.ucdavis.edu/how/plan.html#PlanStep3.

Table 1: Sample program curriculum matrix

Program Learning Outcome (PLO)	Required courses										
	1	2A	8	10	50	97	102	135	152	188	197
PLO 1 (disciplinary knowledge)	I		P		P		P			D	
PLO 2 (disciplinary knowledge)		I		P		P					D
PLO 3 (disciplinary skills)			I		P			P		D	
PLO 4 (communicating in the discipline)		I	P			P			P		D
PLO 5 (think and act like a member of disciplinary community)	I			P			P			D	
I=Introduced; P=Practiced; D=Demonstrated											

Table 2: Aligning outcomes to course expectations

When the Learning Outcome (LO) is:		Coursework requires:
introduced (I),	students are introduced to what they will be expected to know and be able to do as a result of the course / program	basic ability to remember and understand
practiced (P),	students have opportunities to consolidate their learning through practice in varying contexts	developing ability to apply and /or analyze
demonstrated (D),	students are expected to demonstrate mastery of the Learning Outcomes (LOs)	an advanced ability to evaluate and /or create

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ATeam@ucdavis.edu

Table 3: Sample curriculum matrix - Courses aligned to desired levels of mastery

	Emerging (I)	Developing (P)	Competent (D)
PLO 1 (disciplinary knowledge)	1, 8	2A, 50, 135	188, 197
PLO 2 (disciplinary knowledge)	1, 2A	2A, 8, 10, 152	188, 197
PLO 3 (disciplinary skills)	2A, 8	50, 97, 102	188, 197
PLO 4 (communicating in the discipline)	10, 50	102, 135	188, 197
PLO 5 (think and act like a member of disciplinary community)	97	102, 135, 152	188, 197

Data Collection

EVIDENCE – TYPES & SOURCES

Direct evidence of learning provides concrete examples of students' ability to perform a particular task or exhibit a particular skill. Examples of direct evidence include:

> Pre-/post-tests of students' knowledge or skills; exams and quizzes *aligned to Program Learning Outcome*(s); written work, research projects, presentations, performances and/or exhibitions; capstone or culminating projects / portfolios.

Indirect evidence of learning provides information from which it is possible to make inferences about student learning. Examples of indirect evidence include:

> Items from the University of California Undergraduate Experience Survey and Recent Baccalaureate Recipients (includes post-graduate employment and post-graduate degree program enrollment); transcripts / notes from focus groups and interviews

> For more information about developing a data collection plan, see:
> http://assessment.ucdavis.edu/how/inquire.html#InquireStep2

Data Analysis

EXAMPLE APPROACHES

> For more information about data analysis, see:
> http://assessment.ucdavis.edu/how/interpret.html#AnalyzeStep2

1. Identify a course or series of courses in which students are expected to demonstrate mastery of one or more of the PLOs. Articulate the expectations for performance (via a collaboratively developed rubric, for example). Sample student work from the selected course(s)—removing personally identifying information! Faculty group reviews student work against rubric; aggregated scores are used for program assessment purposes.
2. Develop a rubric which articulates expectations for learning in a course or series of courses in which students are expected to demonstrate mastery of one or more of the PLOs; instructors use the rubric to assess student work and give feedback to students. Data aligned to PLO criteria are examined in the aggregate at the program level.