

# Curriculum Mapping and Learning Outcomes

A curriculum map shows how a program's required courses and experiences fulfill program learning objectives (PLOs). PLOs generally include knowledge and skills that are introduced and developed as students progress through the program; curriculum maps provide a view of that progression. Programs also use PLOs as the basis for assessing student learning outcomes, by using direct measures (e.g., student assignments, internship supervisor evaluation) and indirect measures (e.g., student exit interviews, alumni surveys).

## Program Learning Objectives (PLOs)

Learning objectives should be student-focused, describing what students will be able to accomplish by the completion of their studies. PLOs are not course descriptions or topic lists. Effective PLOs have a hierarchy, beginning with basic knowledge/skills and building in complexity. Also, keep in mind that all objectives should be measurable for the purpose of learning outcomes assessment. A typical program should have between three and ten PLOs. For the purposes of this exercise, assign each objective a number (PLO 1, PLO 2, etc.). For majors or concentrations with distribution requirements, one PLO should be used per distribution category.

Example PLO 1 (knowledge based)	Knowledge and understanding of substantive and procedural law.
Example PLO 2 (skill based)	Design and carry out a research study to test a hypothesis.
Example PLO 3 (value based)	Exercise of proper professional and ethical responsibilities to patients.

## Building a Curriculum Map

**Step 1:** Identify the required courses and/or distributions in your program as well as any key experiences that contribute to PLOs. Examples of a non-course experience would be a required internship, performances, or presentations. Enter these into the first column.

For programs that have distribution requirements, please list the options for acceptable courses to fulfill the distribution requirement and map onto the PLO for that distribution category. For example, Psychology requires three distribution requirements. For Group 1—Perception and cognition: courses numbered in the 2200s, 3200s, or 4200s, make sure the PLO for this distribution requirement is defined (see above), and list the course numbers in the appropriate cell as follows (highlighted in yellow):

		Program Learning Objectives					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
Required Courses and/or Distributions	UN1000						
	UN1001						
	UN2000						
	UN2001						
	UN3000						
	UN3001						
	GU4000						
	GU4001						
	Group 1—Perception and Cognition: courses in 2200s, 3200s, or 4200s						

**Step 2:** Identify cells corresponding to courses where each PLO is relevant.

		Program Learning Objectives					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
Required Courses and/or Distributions	UN1000	X	X	X			X
	UN1001			X	X	X	
	UN2000	X	X				X
	UN2001	X			X		X
	UN3000		X	X		X	
	UN3001	X	X		X	X	
	GU4000	X		X			X
	GU4001		X		X	X	X
	Group 1—Perception and Cognition: courses in 2200s, 3200s, or 4200s	X		X		X	

**Step 3:** For each identified cell, place an I, R or A in that cell, to indicate if objective PLO is Introduced, Reinforced, or Assessed in that course/experience.

- Introduced (I) – Knowledge/skills associated with PLOs are presented in the course. You may find this will happen in the lower level courses in your program.
- Reinforced (R) – Knowledge/skills associated with PLOs are being worked on at a level above the introductory stage and/or are being developed at a deeper level.
- Assessed (A) –This is where the assessment of PLOs is done.

		Program Learning Objectives					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
Required Courses and/or Distributions	UN1000	I	I	I			I
	UN1001			I	I	I	
	UN2000	I	I				I
	UN2001	R			I		R
	UN3000		R	R		R	
	UN3001	R	R		R	R	
	GU4000	A		A			R
	GU4001		A		A	A	A
	Group 1—Perception and Cognition: courses in 2200s, 3200s, or 4200s	R		A		R	

## Student Learning Outcomes Assessment (SLOA)

Student learning outcomes assessment is the process of collecting and analyzing information to demonstrate that, upon completion of an academic program, students have the knowledge, skills, and abilities consistent with the program's PLOs. The results of SLOA can then be used to inform future curricula and/or program change. A program should define how it measures the students' level of success in achieving them for each PLO. In general, there are two ways of measuring learning outcomes and direct measures are more effective than indirect measures:

- *Direct Measures:* Direct measures provide evidence of students' attainment of knowledge, skills, and abilities and the program faculty assess learning outcomes based on such evidence (usually by using detailed rubrics on levels of competency, instead of relying on course grades).
- *Indirect Measures:* Indirect measures ask students or alums to reflect on student learning outcomes.

Examples of Direct Measures	Examples of Indirect Measures
<ul style="list-style-type: none"> <li>• Course assignments</li> <li>• Tests such as qualifying examinations and comprehensive examinations</li> <li>• Theses or capstone projects</li> <li>• Portfolios of student work</li> <li>• Student publications</li> <li>• Presentations at real or mock conferences</li> <li>• Preparation of proposals for external funding</li> <li>• Student effectiveness in field assignments or internships as assessed by direct supervisors using standardized criteria</li> <li>• Feedback from computer simulated tasks designed to measure learning</li> <li>• Performance on licensure or certification exams</li> </ul>	<ul style="list-style-type: none"> <li>• Student surveys that ask about the quality of their education and the knowledge and skills they have acquired</li> <li>• Student course evaluations</li> <li>• Student exit surveys or interviews</li> <li>• Student focus groups</li> <li>• Alumni surveys</li> <li>• Student participation rates in faculty research and conferences</li> <li>• Student honors and awards</li> <li>• Career placement rates after graduation</li> <li>• Admission rates to graduate or professional programs and quality of the institutions to which the students are admitted</li> </ul>

For questions, please contact the Office of the Vice Provost for Academic Programs at [ovpap@columbia.edu](mailto:ovpap@columbia.edu)