WKU

Assurance of Student Learning
Guide to Program Curriculum Mapping

Adapted from The University of Northern Colorado

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What are Curriculum Maps?

A curriculum map helps ensure teaching and course offerings are purposefully structured, logically sequenced/scaffolded, and, ultimately, address/measure student and program learning outcomes. Curriculum maps should be used when planning curriculum in the initial stages of developed as well as in the development of assessing existing curriculum. In addition, these maps describe what is actually occurring in a program's curriculum and pinpoint where learning outcomes are taught and assessed in courses and experiences.

Curriculum maps serve the following purposes:

1. Helps ensure that all program learning outcomes are adequately addressed by the curriculum.
2. Helps identify potential areas of improvement within the curriculum.
3. Helps diagnose gaps that may occur in the core curriculum.
4. Helps document necessary program content and where it is covered.
5. Helps improve the assurance of learning as a whole.
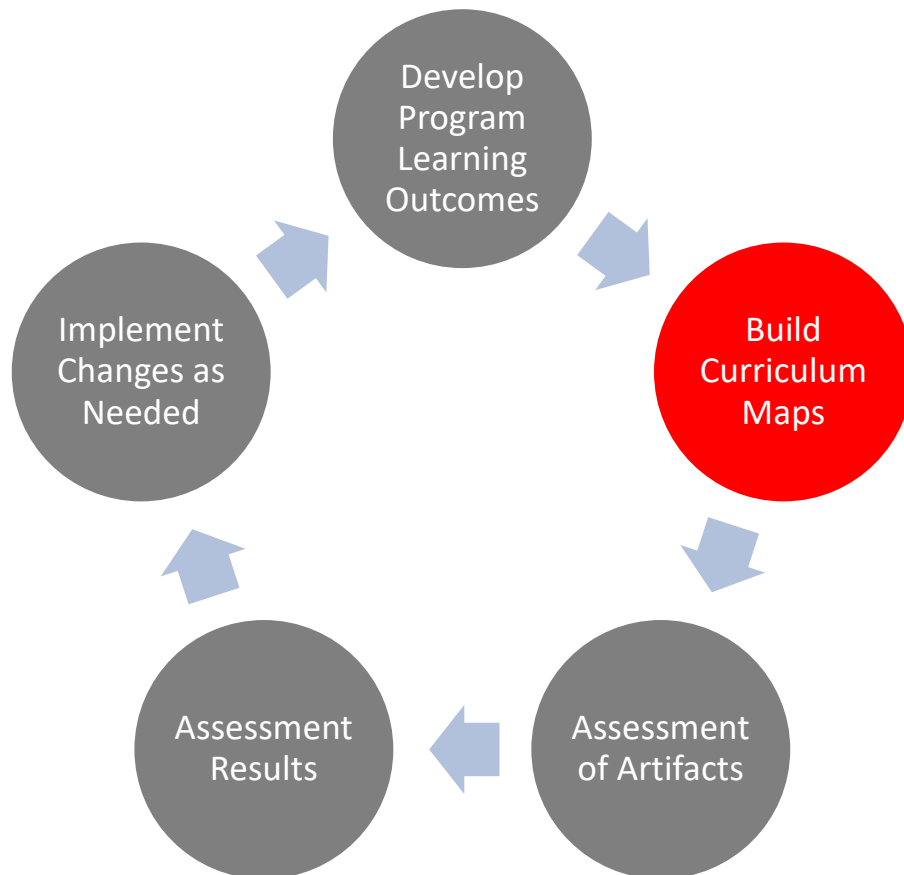
Why Engage in Curricular Mapping?
(Adapted from WSU's Quick Guide to Curricular Maps)

The benefits of curriculum mapping include:

- Providing stakeholders a clear vision of the curriculum's goals that can be shared with new faculty, advisors, TAs, and students.

- Showcasing to instructors how their course is situated in the curriculum and the essential contributions their course makes toward advancing program-level student learning outcomes.

- Helping students see the bigger picture of how their courses fit together so as to focus and motivate their learning.

- Verifying that course sequencing and scheduling are appropriate and consequently guiding changes in rotations, course offerings, etc.

- Providing a catalyst for faculty discussions about aligning and scaffolding courses, teaching, and assignments to effectively support student learning.

- Aligning course offerings taught by multiple instructors.

- Revealing where the curriculum is stronger or weaker in terms of advancing program-level student learning outcomes and thus guiding areas for improvement, such as gaps in the curriculum or unintended overlaps.

- Helping programs identify courses or assignments where an assessment measure could be collected.

- Providing a framework for exploring the alignment between the intended, taught, and assessed curriculum. For instance, if assessment results show that students are not performing well on a program learning outcomes (PLOs), a curriculum map could help faculty determine if the learning opportunities in the curriculum are a possible contributing factor (i.e., is enough emphasis being given to the skills and knowledge for that PLO? Are students given a chance to practice applying and integrating skills and knowledge in different contexts?)

Building a Curriculum Map

The Steps

1. Use or create a template that fits your program.

2. Compose measurable program learning outcomes that reflect what competencies you expect students to have when they finish the **program**. For example, "At the end of the program, students we be able to…" While individual course might address some specific *student learning* outcomes, *program learning* outcomes are designed to assure students graduate with a broader set of skills/competencies.

3. Add the program learning outcomes in separate columns on the map template (Figure 1)
   [Note: In Step 3, it is recommended that programs identify core courses that all students must take to graduate; most specific student learning and assessment occurs in these courses. *If* elective courses or support courses (e.g., general education courses) are critical to the program, then you can include these courses, noting that not all students participate in the course(s). If possible and available, collect the student learning outcomes for each course outside the core to determine when and to what extent the program-level learning outcomes are taught and assessed in individual courses].

4. Add courses (particularly core courses) in separate rows on the map template (Figure 1).

Figure 1. Creating the Template

		Program Learning Outcomes					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
Core Courses	100						
	200						
	300						
	350						
	400						
	499						

5. Place an "X" in a cell to indicate which courses support program learning outcomes (Figure 2)

Figure 2. Course Supporting Outcomes

		Program Learning Outcomes					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
Core Courses	100	X		X			
	200	X	X		X		
	300	X			X	X	
	350	X				X	X
	400			X	X	X	
	499	X	X	X	X	X	

6. Place an I, R, M, and/or A in a cell to indicate different developmental levels the student will experience through the curriculum (Figure 3).

- Introduced (I) – The skills associated with the program outcome are presented in the course. This most often occurs in the lower-level courses in your program.
- Reinforced (R) – The skills associated with the program outcome are explored at a level above the introductory stage and/or developed at a deeper level.
- Mastered (M) – Students should have developed a sufficient level of competency in the skills associated with the program outcome to have mastered them. This is usually where the assessment of the program learning outcome is done (or the artifact for analysis is collected).
- Assessed (A) – This is the course in which the artifact produced assesses the PLO.

Figure 3. Introduced, Reinforced, Mastered/Assessed

		Program Learning Outcomes					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
Core Courses	100	I		I			
	200	R	I		I		
	300	R			R	I	
	350	M				R	I
	400			R	M	R/M	
	499	A	M/A	M/A	A	A	

Using a Curriculum Map to Evaluate a Curriculum

A curriculum map can be used to identify gaps between expected student learning outcomes and what is taught and assessed in a curriculum. A curriculum map can demonstrate if a course sequence effectively scaffolds and prepares students to achieve the learning outcomes. Identification of gaps and issues in a curriculum map can lead to curricular changes to improve student learning opportunities. Below are questions that can guide analyses of, and discussions related to, curriculum maps:

1. Are all program learning outcomes taught over the course of the program and are the courses offered in the appropriate sequence in the curriculum?
2. Are all program learning outcomes assessed and, if so, are they assessed at the appropriate time?
3. Do all core courses support the development of at least one program learning outcome?
4. Are there any core courses that don't support the program learning outcomes?
5. Do the core courses sufficiently support the development of the program learning outcomes?
6. Is the sequence of how the learning outcomes are taught across courses appropriate and the most effective at supporting students' development of the learning outcomes?
7. What changes to courses, learning outcomes, sequence students take classes, and so on could improve the alignment between the learning outcomes and the curriculum?

It is best practice to engage **all** faculty members in analyses and discussion of a program-level curriculum map. A curriculum map can serve as a catalyst for building reflective practices related to course content, pedagogy, and learning in a program as well as help faculty understand where their course(s) fit in the bigger picture.

Example of analyzing a curriculum map
A program is summarized in the curriculum map in Figure 4. Following the map is an analysis of Figure 4 (this is modified from Allen (2004, p. 43)).

Figure 4. Example of completed curriculum map.

		Program Learning Outcomes					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
Core Courses	100	I		I			
	200	I	I		I		
	300						
	350	R					
	400	M		R		R	
	499	A	M/A	M/A		M/A	

Legend: I = Introduced; R = Reinforced; M = Mastered; A = Assessed

<u>PLO1</u>: There is good alignment between PLO 1 and the courses. PLO 1 is introduced early in the program, reinforced in intermediate courses, and mastered and assessed in upper-level courses. It is, however, mastered in the 350-level course and not assessed until the capstone. Faculty should determine if this concept/skill/competency needs to be addressed again in the capstone. An assessment of this outcome might reveal whether or not students grasp the concept/skill/competency well or not.

<u>PLO 2</u>: PLO 2 is introduced, but not taught or mastered/assessed elsewhere in the curriculum until the last capstone course (499). It could be the PLO doesn't require developing advanced knowledge and reinforcement to master. That doesn't mean it isn't important, but it's probably something easily learned a retained. However, faculty, as a group, will need to determine if PLO 2 should be reinforced in some of the other courses or if the lower-level course introduction is enough. An assessment of this outcome will indicate if students grasp the concept/skill/competency well or not.

<u>PLO 3</u>: PLO 3 is introduced early on in the program, but it is not reinforced the 400-level courses. Faculty members will need to determine why the outcome isn't reinforced in any other low-level core courses. Sometimes programs expect that elective classes will reinforce learning outcomes to students. For example, a program may expect accepted elective courses will cover cultural diversity or general algebra skills or advance writing skills (like "writing in the disciplines). If an outcome is expected to be introduced in an elective course, then program faculty will need to work with the instructors who teach those courses to ensure the learning outcome is introduced or reinforced in those courses.

<u>PLO 4</u>: The PLO was not really included in the curriculum. It was introduced in the 200-leve course but was never reinforced, mastered, or assessed. Faculty members will want to determine if that outcome was an old outcome that is no longer relevant and can be eliminated. Alternative, there may have been an oversight and the curriculum may need to be modified to include teaching related to that outcome.

<u>PLO 5</u>: PLO 5 hasn't been introduced in introductory, intermediate, and most advanced classes. It is reinforced and assessed in one advanced-level class. Faculty members teaching the advanced class may have assumed that the learning outcome was taught in previous courses; however, it has not been addressed earlier in the program. Students may not be sufficiently prepared for this learning outcome. Commonly, research method skills are reinforced and assessed at advanced levels and may not be introduced and reinforced earlier in a program.

<u>PLO 6</u>: PLO 6 hasn't been introduced, reinforced, mastered, or assessed in any of the core classes. It is possible the curriculum, core courses, and assessments have all changed over time, but the learning outcomes had never been revisited. Faculty should decide whether the outcome is still relevant to the program or should be deleted. If the outcome is still essential, deciding where the outcome should be introduced, reinforced, mastered, and/or assessed in the course offerings is imperative. If it is assumed students learn this material in elective courses, it should be at least assessed somewhere in the program. It's important to note that all students don't take the same elective course, which can skew assessment results.

Mapping Challenges

Here are some typical challenges you might encounter when guiding program faculty through the mapping process.

1. What courses to include?
   - Generally, it's best to only include the required courses in your program. If it is imperative to include electives, be aware that not all students take the same electives. There is no assurance the same level of learning outcome coverage as you can with required courses. In this case it is important to make sure the outcome is general.

2. Single course with multiple instructors
   - In many cases, there will be multiple instructors of core course, especially at the introductory level. Coordination among instructors who teach the course and some standardization of what is covered and what assessments artifacts are used is imperative, especially if the course is used for program assessment data collection.

3. Does the curriculum drive assessment or the reverse?
   - This is kind of a chicken & egg question. In short, the program outcomes inform the design of the curriculum, but the curriculum and courses drive the path for assessment. Good curriculum should be carefully designed, not something that randomly evolves over time. Curriculum should address the competencies students should attain in the program and not be tied to tends or the interests of individual faculty unless the courses directly address the PLOs.

4. What if another group controls the course?
   - If courses outside the program are used in assessment it is important to include those colleagues in your discussion and make it clear how their course(s) map to your PLOs.

References & Resources

[Note: This guide was developed by Lyda McCartin and Audrey Tocco, November 2020.]

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