Nathan Lindsay, Associate Provost for Dynamic Learning
(406) 243-4689 nathan.lindsay@mso.umt.edu

Curriculum Mapping

1. What is it? Why do it?

Curriculum mapping is a method to align instruction with a degree's learning outcomes. It can also be used to explore the breadth and depth of content in a curriculum. The map or matrix:

- documents what is taught and when
- reveals gaps in the curriculum
- helps to refine the assessment plan

Benefits:

- encourages reflective practice
- improves communication among faculty
- encourages a proactive approach to improving learning outcomes
- supports the updated "major maps" that will be developed for each degree
- enhances program coherence

2. What does a curriculum map/matrix look like?

It's a table with one column for each learning outcome and one row for each course or required event/experience (or each row contains a course and each column lists a learning outcome).

HYPOTHETICAL BIOLOGY PROGRAM CURRICULUM MATRIX

Key: "I"=Introduced; "D"= developed/reinforced, with opportunities to practice; "M"=mastery that is demonstrated (often at the senior or exit level); "A"=assessment evidence collected

Intended Student Learning Outcomes				
Courses	**Apply the scientific method**	**Develop laboratory techniques**	**Diagram and explain major cellular processes**	**Awareness of careers and job opportunities in biological sciences**
BIOL 101	I	I		I
BIOL 202	D	D	I	
BIOL 303	D	M, A	D	
BIOL 404	M, A		M,A	D
Other: Exit interview				A

[Outline modified from the University of Hawai'i-Mānoa Assessment How-to: Curriculum Mapping/Curriculum Matrix and the University of Missouri-Kansas City Curriculum Mapping]

3. How is a curriculum map created?

1. Faculty members begin with a) the program's intended student learning outcomes, b) recommended and required courses (including general education courses if appropriate) and c) other required events/experiences (e.g., internships, department symposium, advising session, national licensure exams)
2. Create the "map" in the form of a table (see the Curriculum Mapping Template). *Please note that the format of the curriculum map can vary by discipline/field. Curriculum maps can focus on accreditation standards and can also incorporate aspects of Bloom's Taxonomy.*
3. Mark the courses and events/experiences that currently address those outcomes:
    - "I" indicates that students are introduced to the outcome.
    - "D" indicates the outcome is developed/reinforced and students are given opportunities
        - to practice.
    - "M" indicates that students have sufficiently practiced and can demonstrate mastery.
    - "A" indicates where evidence might be collected and evaluated for degree-level
        - assessment (collection might occur at the beginning and end of the program if
        - comparisons across years are desired).
4. Faculty members analyze the curriculum map. They discuss and revise so that each outcome is introduced, developed, and then mastered. In addition, each outcome should have an "A" to indicate that evidence can be collected for degree-level assessment.

4. What are some best practices?

1. Try to introduce the learning outcomes early in the curriculum and then give sufficient practice and reinforcement before evaluation of students' level of mastery takes place.
2. Involve as many faculty as possible in the development and analysis of the curriculum map.
3. Use the curriculum map to identify the learning opportunities (e.g., assignments, activities) that produce the program's outcomes.
4. Connect the dots: Each faculty member can make explicit connections across courses for the students. For example, at the beginning of the course, a faculty member can remind students what they were introduced to in another course and explain how the current course will have them practice or expand their knowledge.
5. Allow faculty members to teach to their strengths (each person need not cover all outcomes in a single course). "Hand off" outcomes to those best suited for the task.
6. Ask if the department/program is trying to do too much, or conversely, if outcomes should be added. Eliminate outcomes that are not highly valued and then focus on highly valued outcomes by including them in multiple courses. (The eliminated outcomes can still be course- level outcomes. They need not disappear completely from the curriculum.)
7. Set priorities as a department/program. Everyone working together toward common outcomes can increase the likelihood that students will meet or exceed expectations.
8. Communicate: Publish the curriculum map online and distribute to students and faculty, in conjunction with the major maps and/or list of a degree's learning outcomes.

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