

**Course Mapping:
Principles for Designing a Coherent and Assessable Curriculum
What to Do and Why**

- **Each required course needs at least one** (but ideally no more than three) **major course learning outcome(s) (CLOs)**. A major CLO is one that all instructors for that course will teach and assess.
 - Why? A program's required courses provide the pathway through which students acquire the knowledge and skills they need to achieve the program's program learning outcomes. If a course is required, it is presumably required because the faculty agree that the course teaches one or more things that students need to learn in order to be able to achieve the program learning outcomes. To ensure that all students are taught those necessary things, the program faculty need to make explicit and formalize what those necessary things are in each required course by creating at least one major course learning outcome(s) (CLOs). Major CLOs are the things that are all faculty who are instructors for that course will teach and assess because they are the course's *raison d'être* in the curriculum. The maximum number of major CLOs per course is simply a recommended rule of thumb designed to limit the amount of required material instructors need to teach and assess in a particular class.
- **All major CLOs need to be single-barreled (i.e., no "and") and describe an activity that the student can engage in that the instructor can observe at a single moment in time** (either because the activity results in a learning artifact like a test, paper, or portfolio or because it results in a live performance that the instructor will see or hear at a scheduled time).
 - Why? CLOs need to be single-barreled because your results will be muddy and uninterpretable if you try to assess two or more things simultaneously. The CLO needs to describe an activity that you can observe at a single moment in time to enable you to render a discrete judgement about the student's performance.
- **No two major CLOs should be identical to each other.**
 - Why? Students shouldn't have to take two courses that are intentionally designed to teach an identical thing.
- **The activity described in the major CLO should correspond to a graded activity (an assignment or test questions) in that course.**
 - Why? Student activities allow faculty to assess student performance. If the activities are graded components of the course, students will attempt to do their best work.
- **The program should have the following *for each of its program learning outcomes*: at least one required course with a major CLO that introduces skills or knowledge that students will need to acquire in order to achieve the PLO and at least one required course with a major CLO that develops skills or knowledge that students will need to acquire in order to achieve the PLO.** These are respectively I-level CLOs and D-level CLOs.
 - Why? Your program's major course learning outcomes are the building blocks of the program's PLOs. Constructing your curricular architecture in the way described above will give students the learning opportunities they need in order to develop the skills and knowledge that the program is designed to teach. Program learning outcomes are not things that students should be able to

learn early in the program; they should be the culmination of the program: the sophisticated skills and complex ideas that are developed over multiple courses through a multi-step process.

- **The program is to have one major course learning outcome that is identical to *each program learning outcome*.** The CLO that is identical to the PLO is the one in which students demonstrate that they have achieved the PLO. These are, therefore, A-level (achieve-level) CLOs.
 - Why? Converting your PLOs into A-level CLOs and assigning them to a specific course will allow you to teach your program learning outcomes in a class and assess them using a graded activity that results in a culminating student product or performance assigned in that course.
- **Your A-level CLOs (i.e., your PLOs) should be taught and assessed in your undergraduate program's capstone course (and/or another 400-level required class) or your graduate program's thesis/research/comprehensive exam course.**
 - Why? Your PLOs should be the culmination of what students have learned in the programs. Embedding the PLOs in the capstone (and/or another required 400-level course) or the final required course in a Master's program will allow you to assess whether students have achieved the PLOs by the time they graduate.
- **When possible, students should take courses that have I-level CLOs for a given PLO before they take any with a D-level CLO for that PLO. In all cases, they must take the course with the A-level CLO after they have taken all courses with the I- and D-level CLOs that build to that PLO.**
 - Why? Because D-level CLOs are designed to build on the learning embedded in corresponding I-level CLOs, students should take courses with the I-level CLOs first. Students need to take all of the required I-level and D-level courses that correspond to an A-level CLO before they take the one with the A-level CLO so that they have the learning opportunities necessary to demonstrate the A-level CLO.
- **Elective courses should not be included in your curriculum map.**
 - Why? Elective courses should not teach anything that students need to know to develop the skills or knowledge embedded in your PLOs. This is because only some students will elect to take the course. If students have to learn something in order to be ready to achieve a program learning outcome, that thing needs to be encoded in the major CLO of a required course so that you can be sure that all students will have been taught it.
- **All faculty who teach in the program should approve the curriculum map before you submit it.**
 - Why? A program's major course learning outcomes and curricular design will affect all of the faculty in the program. Therefore, it's important that the curriculum map be a shared product everyone can endorse.

Course Lists

If your program's curriculum has a course list—that is, *a list* from which students *are required to choose* one or more, *but not all*, classes—read this. Otherwise, spare yourself the headache and ignore it!

There are two mutually exclusive types of course lists. One is a primary course list; the other, a supplemental. Courses that appear in a primary course list teach material that is a building block for the program learning outcomes. All of the courses in this type of list need to have one or more “parallel” major CLOs.

Parallel CLOs denote an identical skill; each of the parallel CLOs, though, specifies a different context in which the student will learn to apply the skill. For example, the following two are parallel CLOs: “At the end of BIO 210, students should be able to pose researchable questions about human anatomy” and “At the end of BIO 223, students should be able to pose researchable questions about plant biology.” So too are these: “At the end of ENG 317, students should be able to use close reading techniques to interpret Shakespearean texts” and “At the end of ENG 277, students should be able to use close reading techniques to interpret contemporary poems.”

In a supplemental course list, by contrast, each course is a “one-off”—that is, there is no underlying curricular thread that connects all of the courses to each other. The courses in a supplemental course list should not cover any material that students need to know in order to acquire the PLOs. Rather, these courses are to serve exclusively as enrichments.

When creating your program’s curriculum map, the faculty need to determine whether a course list is primary or supplemental. To decide, you should ask yourselves whether all of the courses in the list are designed to (or could be designed to) teach a skill that is necessary to achieve a PLO or whether the courses are unrelated to each other.¹ If it’s the former, create parallel CLOs for each course and include the courses and their CLOs in your curriculum map. If it’s the latter, leave the courses off your curriculum map.

Setting up your curriculum map this way will guarantee that your majors follow a path through the curriculum that provides them with all of the learning opportunities necessary to acquire your program’s learning outcomes.

¹If you have a course list that is a mix of primary and supplemental or contains some courses that teach one required skill and other courses that teach another, you need to redesign your lists to make them “single purpose.” In the case of a list that mixes primary and supplemental, you can break the list into two and sort the courses into a primary list and a supplemental list. In the case of a list in which some courses teach one required skill and others teach another, the list should be divided into two primary course lists with each list restricted to those that teach the same skill.