Cross-List Working Group Report and Recommendations

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Sponsors

University Curriculum Committee (UCC)

Abstract

This working group was charged with investigating three primary considerations related to course cross-listing:

1. the treatment of cross-listing and how it supports goals and/or enrollment practices on campus,
2. the problems cross-listing may cause for students, departments, and the student digital ecosystem, as well as the potential conflicts, misunderstandings, complications, and costs that arise from cross-listing, and
3. recommendations for the future practice of cross-listing on campus

The group's investigation revealed that the use of cross-listing has a long and complex history and over time has created different meanings for cross-listing depending on the specific course and audience. These many different meanings cause misunderstandings and issues across campus – for example, course selection, program requirements, and topic representation.

We recommend raising awareness of the current challenges; clarifying what it means to cross-list by identifying targeted reasons to cross-list (such as shared ownership); optimizing the use of cross-listing by providing guidance on how it should be used appropriately; and finding alternative ways to accomplish the other goals that could be better served with different solutions. This focused use will ensure clear communication and minimize confusion among faculty, students, staff, and the public; reduce administrative burden; and better reflect the educational offerings at UW-Madison. This goal will take time, effort, and potentially the creation of new tools. A good communication plan to socialize this issue and ensure buy-in and support from school/college and departments/units will be key, as crucial decisions will fall on these stakeholders. A phased approach is recommended, which will likely need a sponsor or another group to oversee. Phases might include raising awareness of the problems cross-listing causes, for students in particular; creating or revealing solutions to meet the needs of departments in other ways and supporting a move to those solutions; and offering "free" uncross-listing of courses.

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Background

Each course at UW Madison has one unique "Course ID" within the Student Information System (SIS). When a course is cross-listed, multiple subjects are attached to that course ID, but all other aspects of the course (i.e., catalog number, description, requisite, title, course attributes, learning outcomes, etc.) are identical across the enterprise systems. However, while many stakeholders think of a cross-listed course as "one course" (e.g., BIOLOGY/ZOOLOGY 101), the course is actually presented to external audiences as multiple courses in many of the campus systems (i.e., BIOLOGY 101 and ZOOLOGY 101). For example, course scheduling, the transcript, and Course Search & Enroll generally present cross-listed courses as different courses. In other areas and systems, these different courses are merged, sometimes at significant administrative and technical costs, so they can be presented as one course to meet functional needs. Examples of this include SIS grade rosters, Canvas, DARS, and Lumen/Guide.

Cross-listing at UW-Madison pre-dates many of the current university digital systems and processes. Creating a new subject listing once simply meant contacting the Office of the Registrar to add a new subject and to associate specific courses with the new subject, a practice that was thought to make courses easier to find in the former printed course catalog. Cross-listing allowed these courses to be listed in multiple places, reflecting relevance for these different subject areas. This process of subject creation did not require approval by school/college or university governance bodies, as subjects were not captured as a part of governance oversight until the mid-1990s.

Over the years, the transition to an electronic catalog, as well as implementation of other technologies to improve the teaching and learning experience, has created many challenges related to cross-listed courses. As cross-listing was a way to associate multiple subjects to a single course, the practice came to reflect a variety of goals and priorities that have very little to do with the actual practice of cross-listing. (A list of the current, disparate campus wide uses of cross-listing are presented starting on page four of this report.)

Much of the work to maintain cross-listing is done manually and by highly customized systems on a recurring, often ongoing basis. When implementing new enterprise systems/technologies, vendors are unable to deliver standard cross-listing abilities because each institution treats cross-listed courses differently. This requires custom development, by both the university and the vendor, to build workarounds to system architecture and integrations to maintain and consume cross-listing. Even with extensive effort, these workarounds are frequently partial or suboptimal, as they attempt to bend systems to address cross-listing with tools that were not meant to do so. When any kind of upgrades are available in these systems (e.g., SIS, Canvas, Lumen), that architecture may need to be reconfigured to continue working as we need it to (which may also be not as the software is intended to be used). Outside of the software upgrades, manual intervention is required at every class section in both SIS and Canvas to ensure courses operate in the least confusing way possible, such as combining all sections into a single-entry point in Canvas. This work is costly to maintain both in time spent supporting the existing architecture and lost opportunity cost.

While the goals met by cross-listing are important, the use of this single characteristic causes conflict among stakeholders and is not consistently supported by the university's processes. These uses of cross-listing are often contradictory, and lead to confusion and complication. Because there are so many purposes for cross-listing, audiences have no way of knowing what is being represented or intended by a cross-listed course.

Recommendations

The cross-listing working group provides the following recommendations:

1. Educate campus on how cross-listing works and why it is problematic to continue with current practice.
    a. Communication from campus leaders (e.g., Provost and Vice-Provosts) alerting campus about the implications of cross-listing, the problems associated with it, and available educational resources.
    b. Educate early on before the course proposal begins by providing various modalities for education.
2. Revise and clarify the cross-listing policy to indicate a definition of what it means to cross-list with recommended rationales for allowing cross-listing. Recommended rationales are as follows:
    a. We recommend that cross-listing be restricted to situations in which all offerings of the course, regardless of the subject listing, meet **all** of the following criteria:
        i.   all offerings have substantially the same content and/or seek to achieve the same learning outcomes.
        ii. all units are responsible for curating the course content and actively collaborate in setting/meeting learning outcomes.
        iii. the teaching of the course is coordinated by the units through, for example, the mechanisms of alternating the course offering between semesters or years.
        Note: For implementation and full details, see Addendum #1
3. Re-evaluate 10% of cross-listed courses across campus each year with the intent to reduce the overall number of cross-listed courses. A targeted approach may be identifying courses that are cross-listed where students always enroll in one subject over another or to minimize negative student impact by investigating cross-listed courses with high enrollment.
4. Pursue an option within existing enterprise systems to separate course ownership and scheduling (cross-listing) from course marketing/categorization, such as tagging course or keyword search.
5. Pursue alternative solutions for the other reasons people cross-list within a year, and provide recommendations for and resources for implementation.
    a. Consider how program requirements are written. Identify all courses that may meet major requirements (especially electives), as opposed to listing any course within a subject.
    b. Separate instructor-specific needs from the permanent characteristics of course.
6. Charge a cross-listing working group (in its current form/membership or revised over time as warranted) to continue this work for the next four years.
    a. A primary finding of this working group is that cross-listing has been asked to serve many, sometimes contradictory, goals. As a feature of courses, cross-listing is intertwined in nearly all aspects of the university's academic life, creating layers of complexity in the key systems that support it. These include systems for academic governance (Lumen), catalog (Guide), student information (SIS), registration (Course Search & Enroll), learning management (Canvas), teaching assessment (AEFIS), degree audit (DARS; Graduate Student Tracking System), data reporting (various tools and systems), and more. As a result, changes to cross-listing and movement toward better solutions will take time. We thus recommend a phased approach to tackling the challenges posed by cross-listing, with future iterations of this working group continuing this work over the next several years. This will afford the necessary opportunities to promote the initial findings of the working group; seek continued stakeholder input; identify alternatives to cross-listing through consultation with subject-matter experts; evaluate the feasibility and costs of these replacements; and develop policies, guidelines, and best practices for effectively leveraging more targeted uses of cross-listing alongside new alternatives. The working group should provide annual updates to the University Curriculum Committee

and the University Academic Planning Committee (if applicable) on the state of cross-listing. After four years, the working group's final report can assess whether these steps have effectively minimized the use of, and confusion caused by, cross-listing and determine whether it can be further minimized and/or removed completely.

Findings

There are major problems with cross-listing and over the years we have built certain dependencies on cross-listing that may be better served by other means. Cross-listing was initially created as a tool used to indicate relevance in multiple subjects when the only mode of searching for courses was to browse the physical paper catalog. As the university upgraded software and tools, this tangible artefact was migrated as best as possible into the digital world. While the original intent was to articulate relevance in other subjects, cross-listing now serves as a vehicle to achieve many, very different purposes, which are complicated, expensive to maintain, often conflict with each other, create lots of opportunities for errors, and cause much confusion, esp. among advisors and students.

Cross-listing Process

Cross-listing a course is a governed process and is therefore a department or unit-level decision requiring approval from all departments/units involved, as well as the home school/colleges of those departments/units and the University Curriculum Committee. The cross-listing becomes a permanent characteristic of the course, regardless of the instructor, until another course change is approved through the governance process (departments/units, school/colleges, university). The governance process recognizes each cross-listed subject listing as an equal partner for the course. But once a cross-listed course is approved, systems treat each subject in the cross-list as a distinct course. Our IT must then manually intervene within these systems to treat the course as a single entity through system modifications that must be maintained over time and/or by individual interventions for each cross-listing. The amount of work cannot be understated as the intervention happens at various levels (e.g. each section of each course in SIS and Canvas) and involves substantial manipulations of the enterprise systems beyond their intended uses.

Students enroll in a single subject listing for a cross-listed course. This subject listing appears on their student record and transcript. Instructors and academic technologists for cross-listed courses must link these separate subject listings together for course materials like Canvas. Each subject listing maintains course scheduling for that course, although the university has created work-arounds to smooth this process, labeling one subject listing the "primary" for scheduling cross-listed courses for a given term. See Addendum 2 for the life cycle of a course.

Common uses of cross-listing

The working group surveyed sample stakeholders and compiled a list of the most common uses of cross-listing. These uses fell into a few broad categories: Curricular, Instructor-specific, and Promotional.

Curricular

Curricular uses included contextualizing the course within the university curricular space as well as relating the course to program curricula.

1. **Shared ownership of a course** – The relevant departments are actively and consistently involved in the course through instruction, scheduling, and/or defining and updating course content and learning outcomes.

This rationale is most consistent with the current governance of cross-listing and the processes supporting courses. Cross-listing supports joint department-level decisions about curricular content, instruction, and scheduling. Cross-listing ensures that all member departments must approve changes to the course catalog and allows all member departments to schedule the course. Course development, administration, and delivery are the ideal rationales for cross-listing (not just that the subject matter of the course is related to the subject being added to a cross-list). We define the preceding items as "engaged shared ownership."

In practice, joint, engaged shared ownership of a cross-listed course by all members is not always true, and the current governance process for course integrity is weakened. When member departments do not see themselves as an equal joint owner in the course content and instruction, they do not govern that course with the same care as other courses in the course array. Departments have sometimes developed alternative processes for approving these cross-listed courses, which do not necessarily include faculty review and approval. This creates two non-transparent categories of courses in a subject listing's course array – one that is explicitly overseen by the department/unit, and another that is in "name-only," and does not have the same oversight and involvement. Additionally, departments have conflict over changes and instruction when members do not agree to this shared ownership for content and instruction. Member departments wishing to become involved in instruction of a cross-listed course may encounter resistance from the member who has historically provided the instruction. Additionally, because there is no regular interval in which to review cross-listing, certain courses where sections are taught through different departments have had drift over time, with sections being significantly different from each other (e.g., COMP SCI/E C E 252, where COMP SCI instructors teach COMP SCI students in sections separate from those where Engineering instructors teach E C E students).

2. **Program curriculum** - Some program curricula currently include all courses in a specific subject listing, or within a numerical range in a subject listing, as opposed to identifying a specific course to meet program requirements.

   This method of creating curricula (selecting any course within a subject) may be an oversimplification of program requirements and subsequently minimizes the need to send through program proposals articulating specific courses. Including all courses within a subject means that any course, even if cross-listed (when taken as the subject included in the curricula), will count in program requirements. This requires the program learning outcomes to be non-specific enough to encompass all potential courses in that subject listing, or places significant restrictions on courses that may be included in a subject listing. Courses may not be consistently reviewed for their alignment with program learning outcomes, and the course approval process does not include a review of program curriculum, outcomes, or assessment. Courses may have drift and can be completely overhauled without review at the program level to ensure the course still meets the intent of the program requirements.

   Using cross-listing to define program curriculum does not always combine well with other rationales for cross-listing, as many of the current rationales for cross-listing do not relate to program-level curricular decisions. A program using this method of building curricular requirements must have methods of considering a course's place in the program curriculum for each cross-listing request and may find that certain other rationales for cross-listing do not combine well with their curricular expectations. The working group found that this rationale engendered a lot of misunderstanding, with populations of both students and faculty believing that subject listings represented programs of similar names.

3. **Program curriculum (accreditation)** – Engineering utilizes cross-listing to distinguish Engineering content from math/science content (i.e., non-engineering courses) for its accrediting body. The school also use cross-listing to indicate which courses should count in any given major/degree for computing grade point average in any given subject. It was noted that there are potential ways to do this differently, but the working group did not extensively investigate that.

4. **Interdisciplinary content** - Because interdisciplinary content cannot be adequately represented by the subject convention that we currently utilize, some departments choose to employ cross-listing. Unlike the shared ownership discussed in #1 above, some departments choose to utilize cross-listing as an indicator of interdisciplinary subject matter/course content.

   Interdisciplinary courses are very important to many stakeholders across campus and exist all over campus without distinct boundaries. However, the use of cross-listing to represent this interdisciplinarity is problematic and may counteract the interdisciplinary intent. Subjects that are intended to house "interdisciplinary" courses may be under-utilized and are frequently cross-listed with other subjects to emphasize course content by including other subject listings that may be relevant to that content. In so doing, each subject is, by definition, an equal partner in governance and must review and approve any course proposal, and subsequently each school/college (if applicable) must review and approve as well, hampering the time it takes to create/change a course. This use of cross-listing also results in two non-transparent categories of courses in a subject listing, where the department is not involved in certain courses.

   Using cross-listing to represent interdisciplinarity is also problematic because the choice of which subjects are represented is generally made by one department. It is not required to cross-list if the subject matter is relevant to a course subject that is different than the subject proposing a course and is not consistently done across the university. Since cross-listing a subject also provides that subject with partial ownership of the course, an incomplete or inaccurate view of interdisciplinary content may result.

   Because cross-listing has many other reasons, an audience cannot know why a course is listed. This is especially problematic when the cross-listings are meant to impart meaning. For example, UW-Madison has no single cross-listing for ecology, and the course ENVIR ST/HIST SCI 353: History of Ecology has completely different subject listings than BOTANY/F&W ECOL/ZOOLOGY 460: General Ecology. One can reasonably assume that the former includes botany or wildlife ecology, and the latter includes topics related to environmental studies. However, listing all subjects that encompass ecology would be cumbersome and unwieldy. It could also be that these cross-listings were created based on the course development and instructional partners, and they do not represent interdisciplinarity at all.

5. **Relevance to subject listings**

   The relevance to another subject listing is often listed as a reason to cross-list to advertise courses to students that may not otherwise consider a course. Generally, this is also used when the content of a course is relevant to various subjects. For example, Africa: An Introductory Survey is cross-listed by POLI SCI, AFRICAN, AFROAMER, ANTHRO, GEOG, HISTORY, and SOC. The content covered in the course relates to the content each subject teaches, so it is identified as a cross-list for each subject.

   By doing this, each subject is considered an equal partner in governance and must review and approve any course proposal, and subsequently each school/college (where applicable) must

review and approve as well, hampering the time it takes to create/change a course. This use of cross-listing also results in two non-transparent categories of courses in a subject listing, where the department is not involved in the development, instruction, or assessment of certain courses.

As with interdisciplinarity, using cross-listing to represent relevance is an incomplete solution. The intersectionality of modern academic coursework means that choices are often made about which subjects to include and which to leave out. For example, in the above course, SOC is included, but C&E SOC is not. This use of cross-listing also has the same issue of conferring meaning on the cross-listing words themselves when other uses of cross-listing do not do so.

6. **Avoiding duplication**

   Courses are sometimes cross-listed so that departments do not teach two identical courses (note that creating new courses with identical content taught is not permitted due to overlap). If the departments are sharing ownership, as described in #1, this is an appropriate use of cross-listing.

Instructor-specific uses

Instructor-specific uses for cross-listing are common throughout the university. However, cross-listing is a governed process to reflect permanent course characteristics, independent of instructor. The practice of using cross-listing to indicate instructor intentions has grown up over time and is woven into certain university practices but is not supported by the governance process. Courses are owned by departments, not individual instructors.

7. **Instructional appointments**

   In some departments, faculty are expected to teach a certain number of courses within a particular subject "owned" by that department. Cross-listing is sometimes used to accomplish this expectation. For example, a faculty member in Jurassic Studies who teaches a Cretaceous Studies course may be construed as not contributing to the Jurassic Studies department's teaching loads and teaching commitments of the faculty *unless* that course is cross-listed in Jurassic Studies. Additionally, cross-listing serves smaller departments and units that only have two or three faculty, some of whom may have split appointments. Some of these long-standing relationships have grown into their own entities (example: Gender & Women's Studies and History).

8. **Multiple instructors**

   Cross-listing is used to represent courses that are "team taught" by instructors from multiple departments. This can be problematic when instructors change, since courses belong to departments, not instructors. If the subject listing is merely meant to represent an instructor, and the department is not committed to the content and continued instruction of the course regardless of a specific instructor, the course array is inaccurate.

9. **Expression of scholarly approach**

   For some faculty, cross-listing serves to communicate to students and others on campus the particular scholarly approach that the instructor is adopting in the course (cf. "Interdisciplinary content" above)."

10. **Structure for Faculty Collaboration**

In some cross-listed courses, instruction and content responsibility are genuinely shared between the cross-listing departments, much like related research activities. This shared ownership leads to productive collaboration and content delivered from multiple useful perspectives. When it works well, the collaboration required to maintain the course is not a burden but a productive activity. Cross-listing prevents conflict over shared instructional turf by providing useful structure to the necessary collaboration. When supported by the cross-listed departments, this reason for cross-listing is akin to the shared ownership discussed above in the Curricular section.

11. **Credits Follow the Instructor (CFI)**

For instructors with dual appointments, cross-listing courses is sometimes used to indicate that dual appointment. This results in CFI allocated to both departments.

However, this can cause issues as well. Since cross-listing is a permanent course characteristic (associated with the subject/department), unless both departments are committed and involved at the departmental level, a change in instructors can mean that a department uninvolved in the course development and administration has ownership of the course. Additionally, instructors with dual appointments can teach a course that is already cross-listed, which may allocate CFI to two departments without intending to. For an example: Jurassic Studies 101 is cross-listed with Cretaceous Studies. A new instructor is tapped to teach this course as part of their teaching commitments to Jurassic Studies. If that instructor has a dual appointment in both Jurassic and Cretaceous Studies, their CFI will be allocated to both departments according to their instructional appointments, instead of only to Jurassic Studies.

Promotional

12. **Subject listing visibility in University publications**

Departments currently use cross-listing to elevate their programs or courses by having courses show up more frequently in searches and appear under multiple subject headings. More robust search tools in Course Search & Enroll and Guide would support students finding courses through keyword searches instead.

13. **Supporting student "sifting" of areas of interest – students take a cross-listed course in one subject listing, which develops an interest in the related subject**

When students enroll in a cross-listed course, they may be taking it to fulfill a requirement in one subject, but the other subject becomes a topic of interest. This serves to broaden the applicability of subjects or programs (degree/majors/certificates) that would perhaps not otherwise attract those students.

Impacts on Students

Course selection: As the above pages indicate, cross-listing currently can represent a host of different uses that relate to subject matter, departmental relationships, program requirements, instructor characteristics, and promotion - these reasons are not transparent. There is no way for a student to know why a course is cross-listed. This leads to confusion and assumptions that take time to discuss and resolve. Providing students with a transparent course array would promote the sifting and winnowing of interests.

a. Generally, students can enroll in any subject listing of a cross-listed course and it will count toward their degree. In these cases, advisors spend significant time explaining that cross-listed courses are the same course, even though they are listed separately in Course Search & Enroll. It is not uncommon for students to ask which subject listing is the "better" choice and to sometimes even ask to have their transcripts changed after the fact to reflect a more "desirable" subject listing.

b. Subject listings are used in the curriculum for some programs, and in those cases, students may have to enroll in a specific subject listing for a cross-listed course to receive credit toward their degree. Advisors for those programs need to explain why the subject listing matters and make sure students enroll in the correct subject listing. This is particularly complicated for students who transfer programs, as they need to adapt to a different relationship with the subject listing and enrollment.

c. Students enroll, or plan to enroll, in the same cross-listed course multiple times under different subject listings. Cross-listed courses are listed in different orders in Guide and referred to by different names. Because they are listed under each subject listing separately, students cannot easily tell the difference between a cross-listed course and two courses with the same name. For example, multiple advisors indicated that students with credit from AP/IB for ZOOLOGY 151 would subsequently plan to enroll in BIOLOGY 151, not realizing that it was the same course.

This issue also requires UW-Madison advisors to have a thorough understanding of which courses are cross-listed. Courses are often referred to by only one subject listing, regardless of their cross-listing, and only appear on student records under one subject listing. New advisors who provided feedback to the working group indicated that this depth of expected knowledge was an unexpected barrier for their advising.

Enrollment Issues: Cross-listed courses appear separately in Course Search & Enroll under each subject listing, and each subject listing has separate enrollments and underlying associations. The Registrar's Office designates one of these subject listings as "primary" for scheduling, but this designation is not public-facing.

a. Students (and advisors) are often uncertain who to contact with questions regarding enrollment in a particular cross-listed course, which can cause confusion and delays in enrollment. For some cross-listed courses, all cross-listing partners have information about enrollment (caps, open seats, scheduling, etc.). For others, only the "primary" subject listing has that information.

b. When students are given permission to enroll in a cross-listed course they can only enroll in the subject listing giving the permission, causing confusion and frustration if they try to enroll in one of the other cross-listed subjects. This issue can be compounded by the issues raised in "Course Selection," since the student may need or want a specific subject listing different from the one for which they were given permission.

c. Because each subject listing for a cross-listed course has its own underlying associations, enrollment information is not always consistent, either due to human error or subject-specific requirements. In particular, enrollment issues can arise when requisites are not correctly entered in Course Search & Enroll for each cross-listed subject. These enrollment issues often require a back-and-forth among students, advisors, curricular reps, and instructors to resolve the issue.

Program/Curriculum Issues: Curricula are not constructed the same across schools/colleges, so how students complete their requirements may be completely different experiences in different programs. Some programs do not articulate specific courses that are required to complete the degree/major. Instead,

they list a number of credits within specific subjects that will count towards completing their degree/major.

    a. For these curricula, cross-listing may increase the number of courses that can meet this major requirement, while not requiring the program to update Guide or DARS to include new courses. This requires the student to enroll under the subject listed in their degree/major requirements, unless the program has manually included the additional subject listings of that course in DARS. Students have dropped and enrolled in the same course in separate subject listings in order to align with program requirements.

    b. Not all curricula are constructed by using subject listings. When students change programs or add a second major, navigating new cross-listing considerations in addition to new program requirements is an extra burden.

    c. Programs can list cross-listed courses with any order of subject listings. It can be difficult to find courses under these different names. For example, BIOLOGY/ZOOLOGY/BOTANY 151 may be referred to in advising appointments as "Biology 151" but listed in the curriculum as "ZOOLOGY/BIOLOGY/BOTANY 151," under "Z" for zoology. Sometimes to minimize confusion, programs will list the same course in their requirements under each subject of the cross-listing. For the above example, some programs would list this course under BIOLOGY, BOTANY, and ZOOLOGY, even though they are the same course.

Instructional Issues (learning environments: Course evaluations, AEFIS, Kaltura, Canvas): Cross-listed courses have multiple sections, just like in SIS. Each section that a student enrolls in has a matching section in Canvas.

    a. Instructors generally want all the sections for a course collapsed into a single space in Canvas, which requires collapsing sections into a single subject listing. This is confusing for students because if they enroll under one subject and that was not the subject selected by the instructor for the collapsed space, they question if they are in the correct class.

Other Problems and Complexities

In the **Student Enrollment System (SIS)**, class notes are set up on specific sections when scheduling courses and are not always consistent between all subjects in a cross-listing. There is confusion and challenges related to the display of availability of enrollment (open seats); the inherent complexity of enrollment packages (e.g., combinations of lectures, discussions, and labs; this complexity cannot be overstated) is further compounded by the complexities due to cross-listing. The concept of "primary" versus "secondary" departments - the division between scheduling and governance is not well understood and can be gray (e.g., requisite waivers, transfer evaluation).

In the **learning environments (Canvas),** there is manual custom work behind the scenes for each combined shell of a course, and DoIT needs to know how they combined the data because at the end of the semester they will undo the combining of these sections back to reporting for SIS.

Course data across various systems requires manual interference every time there is a new, change, or discontinuation of a course and due to the way technologies are built there is no way to automate this process. When entering course data into the course catalog in SIS, the content must be duplicated on each subject listing, which can lead to errors (for example STAT/HORT/F&W ECOL 572 only had a requisite updated for one subject and that meant students in the other subjects were not held to the same requisite). Integrations with any other software systems are inordinately more complicated to cross-listing. The idea of a single Course ID as being the primary key linked to all cross-listing members does not extend to any competitor products or other vended systems that rely on a Subject + Catalog Number as key fields.

Cross-listing in vendor products is really the Wild West; no institution treats it the same, thus every vendor must custom build cross-listing to fit our needs within the confines of their overall software architecture. There is no ability to create a consistent usage of cross-listing at institutions across the country to ease the tension on vendor products and how they incorporate this data. As such, whenever anything in a cross-listing changes, it requires maintenance across multiple systems (SIS, requisites, transfer equivalencies, degree audit system, Lumen, etc.). Specifically related to course requisites, each cross-listing subject must be included in the requisite as it is public facing and must be transparent to everyone which courses fulfill the requisite; we must also fit this to be under 254 characters, which is the field limit within SIS. Requisites written as requiring a specific numbers of credits in any given subject, automatically exclude any other subjects within a cross-listing that a student may have enrolled in.

Transfer course equivalencies also cause issues relating to cross-listing. Not all cross-listing partners may agree that a course from another institution is equivalent to our course, but currently not all partners must agree for the equivalency to be approved. This has resulted in some courses being removed from program curriculum because the learning outcomes from the other institutions did not meet the learning outcomes of the UW-Madison course.

The **Degree Audit and Reporting System (DARS)** and **Lumen (Courses and Programs)** interprets a course as a Subject + Catalog. Some parts of the software do NOT fully surface all cross-listed subjects, e.g., cross-listed members other than Math do meet a program requirement even though only MATH is listed in DARS. DARS must have each subject listed individually for every cross-list partner, otherwise, a student enrolling in one not mentioned will not show that program requirement complete. In Lumen Programs, custom development makes one course automatically pull in any cross-listings, however if there are changes to the course originally entered, it breaks the course recognition requiring investigation into why there are 'red-boxes' in the curriculum.

Grading of cross-listed courses has many layers, which have had extensive custom building within SIS to support combining grade rosters. The Office of the Registrar must maintain a significant customization of our PeopleSoft Student Information System (SIS) to make combined grade rosters possible.

Data Analysis and Reporting faces many hurdles related to cross-listing. Countless reports and analyses (standing and ad hoc) are made more complicated due to cross-listing, e.g., How many students are enrolled in course X? How are students meeting major requirement Y? How many classes is professor Z teaching? The public facing consumption of course data is Subject + Catalog number, so when a course is cross listed, the person analyzing the data must make a decision: to combine all subject data for every subject, or show only what happened in a single subject. Both of those options have implications of the finalized report. As such, it's hard to explain to someone who doesn't know the background plumbing of cross-listed courses what it means to cross-list. A lot of people want to consume and present data, but this has serious complications if the person does not understand how the data has been presented. There are two notions here: a person asking for specific data (what to give them for internal use) or presenting data for an external audience (general public). Some of the most publicly accessible reports for the university have end users that want to see credits associated with departments and subjects. When a course is cross-listed, the end result for reporting cannot meet the expectations. When people reach out, they indicate that courses are missing from the data, but they may be located in a different subject in the cross-listing. This information is included in the notes, but there's always questions about how courses are reported. If the report includes information for each subject listed in a cross-list, the data may be correct for each subject but also presents data looking like there are more courses than we actually have, which can be problematic especially related to legislative reporting. The Registrar's Office grade-distribution report does not combine cross-listed courses, so the data for cross-listed courses can be challenging if not impossible to use; in Tableau workbooks like "Course Enrollment Counts," enrollment numbers are listed by subject listing, so extra analysis is required to determine total enrollment across all cross-listing partners.

Credits follow the instructor (CFI): The recommended changes to the cross-listing policy are expected to have a relatively small effect on attribution of credits in the Credits Follow Instructor methodology. Most instructors' instructional appointments are payrolled by only one academic department; these credits follow to the instructor's payroll home, regardless of a course's subject. The recommendation to keep cross-listing when it represents joint department ownership of a course would likely mean that the current attribution would be preserved for instructors payrolled by two departments and teaching courses cross-listed by those departments. For more information on CFI, see [Academic Planning and Institutional Research's website.](#)

Changes to cross-listing may have an impact on instructors with appointments in more than one school or college, especially related to dual appointments. CFI in these instances is complicated and should be further investigated to understand how this will financially impact schools/colleges that have instructors with joint appointments.

Meets-with is a topic that came up often in our investigations, but in-line with our charge we did not further explore this topic. For documentation purposes, we want to stress that meets-with is also problematic in that it manipulates courses that are not cross-listed and treats them as if they were, without any governance oversight. This is confusing for students because they may be enrolled in one course and their peers may be in a separate course with a different course title, description, and learning outcomes, but they are both meeting in the same space learning the same material (which may or may not actually relate to the course the student is enrolled in or meet the learning outcomes of both courses). The committee notes that cross-listed courses look almost identical to meets-with courses for students in the enrollment system, since each subject listing for a cross-listed course is listed separately. A student enrolling in a meets-with course seems the same as if they were enrolling in a cross-listed course, even though that may not be the intent of the instructors or the intent of the university.

Stakeholders

There are many stakeholders, and their needs for and problems because of cross-listing are listed below in alphabetical order.

Academic units are defined as any department or department-like body that owns (governs) subjects, and subsequently offers courses. Subjects do not inherently have pros/cons related to cross-listing, but the action of cross-listing has an impact on the department. Cross-listing associates courses from subjects that one may not automatically think of as having a relationship (i.e. formalizes relationships with other units), elevates the awareness of an academic units, signals interdisciplinary relationships with other academic units, increases the visibility of subjects, and demonstrates 'ownership' of courses by including them in the subject which the academic unit owns. Cross-listing thus also has the potential to increase enrollment in a course. Sharing courses that are cross-listed involves collaboration, shared labor, and scheduling of courses within a subject. Theoretically cross-listed courses should be managed jointly by the listed departments, but this does not always happen even if one department wants to treat the course as such.

> A **subject** is defined as "structures for organizing groups of courses in a related subject area or topic that represent a coherent program of study. Each course Subject Listing has a [single] academic owner, which is usually a department or other organized group of faculty (program or center) with a structured faculty executive committee." When creating a new subject, the academic unit must "provide evidence that the new Subject Listing is necessary to support course enrollment by students, that the program faculty are involved in instruction, and that the supporting unit has the resources and staffing needed to maintain a Subject Listing." Courses are housed in subjects, which are owned by departments. Departments approve of all course changes. Catalog-level (not section-level) permanent characteristics of a course are unchangeable without a

course change proposal, which is routed through all cross-listed departments and school/college, indicating shared ownership of the course. A subject is not a department, although many departments have subjects of the same name.

Advisors are professional staff or faculty who have been specifically trained to help students with academic/career plans and goals during college and beyond. Cross-listed courses expand the options available for completing requirements in program requirements. The complications of cross-listing likely outweighs the benefits, as cross-listing causes more confusion when advising students. Students do not realize that all subjects in a cross-listing are the same and try to enroll in multiple versions of a course. They ask advisors which course is the best to enroll in (which may actually matter for pre-professional programs). Cross-listed courses are not always treated as shared courses, so one of the cross-listed subjects may not collaborate with the other subject(s) making it difficult to help students when there are issues. Advisors spend a lot of time explaining cross-listing to students. Advising for enrollment can be difficult with cross-listed courses because there is a limited number of seats per subject, instead of by course id, so if students are advised or permissioned into a subject that is already full, they cannot enroll and need to have more advising and additional work to get them into a course (either by advising to enroll under a different subject, adjust scheduling caps, or adjusting the consent for a course). The concept of a "primary" relating to subjects in a cross-listing is very confusing and impacts students, advisors, and the curriculum/enrollment administrators constantly. Advisors also need to explain the difference between a cross-listed course and a meets-with course because these look the same in the enrollment system.

Curriculum and enrollment administrators are defined as representatives within departments who oversee maintaining and building the schedule of classes. Although cross-listed courses are the same course, when it comes to building the schedule of classes, a subject is deemed the "primary," which means they oversee setting up the sections, managing enrollment caps, and working with other subjects to ensure everyone's needs are met. Being a "primary" on scheduling does not mean that they are the owner of a course, just that they oversee the scheduling for any given term. This can change for every term. These individuals, in many departments, are also responsible for managing enrollment including permissions and waitlists.

Faculty and instructors are defined as qualified instructors that teach courses, review courses in the context of their department, and curate courses within subject listings. Cross-listing may serve to indicate instructional commitments to multiple departments or ensuring that they are teaching courses within their own department (i.e., in subjects owned by departments); fulfill the desire to communicate a course's interdisciplinary nature of a course; acknowledge and credit instructor's engagement with multiple disciplines and pedagogies, and may be understood as an expression of "academic freedom." It may also signal within a unit that an instructor's course "counts" towards that instructor's teaching commitment to the unit. Many faculty and instructors associate meaning with the words used for subject headings. Faculty often believe that their home department must be listed in the cross-list for the purposes of CFI.

Students are defined as any individual attending UW-Madison and enrolled in any course (be it undergraduate, graduate, special, auditor, etc.). For the issues that relate to the student experience, see Impacts on Students (above).

Operations are defined as individuals who facilitate the software and systems that consume the governance decisions of the University. This includes management of the Student Information System (SIS), Canvas, Lumen, Guide, as well as providing data and reporting to external bodies to which the university reports (accreditation, state legislature, federal regulators). They are responsible for ensuring that our resources are best spent where the needs are on campus (reflecting governance decisions). Cross-listing meets the needs of reflecting governance and ownership of courses. Each of the enterprise systems treats cross-listing differently than what happens in SIS so there is a lot of custom and highly technical

work that goes into making these systems work seamlessly for end users while also maintaining the integrity of the data. There are many complications related to cross-listing, which are detailed in the Problem Statement/Complications from Cross-listing.

The **public** is defined as any individual, either affiliated with the University of Wisconsin–Madison, or not, that interacts with UW-Madison courses or course data. Cross-listing represents an associated meaning with words (subjects). There is not necessarily outward facing documentation that distinguishes what a subject is, nor how words are picked to be subjects.

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