

The Success of Co-Requisite Support Courses

While there are many versions of co-requisite remediation, the broad definition refers to the placing of students who have been designated as underprepared directly into college-level courses and providing necessary additional supports to help them effectively engage with the college-level coursework. As the result of co-requisite support strategies that were implemented across the country, institutions and states are seeing double and triple the number of students passing their first college-level mathematics course, and in half the time or less.

How are they gaining these results? Institutions have made structural and cultural changes to their mathematics offerings that address the following issues that have long negatively impacted developmental mathematics students.

The guiding principle of the co-requisite model is to meet students where they are academically and provide them with the content and strategies they need to succeed in their college-level courses.

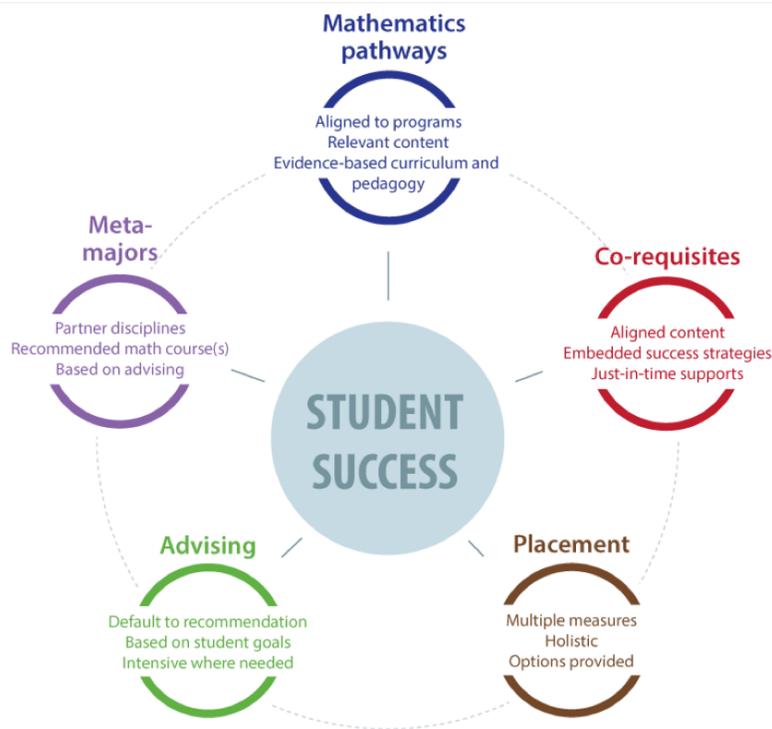
- Long developmental sequences were designed to give underprepared students more time to master mathematical concepts and to improve success in the college-level course. However, that well-intentioned goal has not been attained.
- The long sequences increase the time between the learning of content in the developmental course and the application of that content in the college-level course, as well as providing additional exit points where students may drop out of the sequence due to life obstacles.
- The content in the developmental course may not support the student's college-level course. For example, a traditional Intermediate Algebra course contains content that is not necessary for a college-level statistics course, and lacks other content that would support success in statistics.
- Referral to remedial or developmental courses holds a stigma and contributes to further disenfranchisement of students designated as underprepared. It can lead to a belief that a student does not belong in college and may prevent some students from enrolling in college in the first place.

There is no single “best model” for co-requisites

Local context plays a large role in determining the co-requisite model(s) that will best serve each institution. Many decisions must be made in collaboration among faculty, advisors, administrators, and financial aid staff to design and construct the initial model, with planned cycles of data reviewing and model revision. Some points for discussion are listed below.

Consideration 1: Existing campus supports

- Are there other initiatives on campus that complement this work, such as guided pathways, content and pedagogy redesign, pathways alignment, enrollment initiatives (such as multiple measures placement), persistence initiatives (such as programs designed to help all students develop a growth mindset or productive persistence), etc.? What other on-campus resources can be accessed or included to provide additional support for students enrolled in a co-requisite course?



Consideration 2: Co-requisite model (placement, credit hours, financing)

- **Placement:** What information is used to determine the default enrollment for students into their mathematics courses?
 - Research shows that the majority of students designated as underprepared are well-served by a strong one-semester co-requisite structure. How will you determine which students are best served by a one-semester co-requisite structure or by an alternate option?

<https://ccrc.tc.columbia.edu/publications/improving-accuracy-remedial-placement.html>
 - Consider giving students information about support options and allowing them to choose or opt-in to the support course, regardless of placement.
 - Ensure that students are placed into a course that is aligned to their program of study. Co-requisite supports need to be available for all possible entry points, not just the non-algebraically-intensive courses.

- **Student structures**
 - **Co-mingling:** Mixing college-ready and underprepared students in the same college-level class. Underprepared students are provided additional supports during separate sessions.
 - **Cohorting:** Designating certain sections of college-level courses exclusively for underprepared students. Additional supports may be embedded in or separate from the sections for underprepared students.

- **Calendar structures**
 - Just-in-time supports; one semester**
 - **Support courses:** Separate, structured support courses that run before, after, or on opposite days to the college-level courses; completed within one semester.
 - **Embedded supports:** College-level classes with the developmental content embedded.
 - **Mandatory tutoring:** Required attendance in a tutoring lab for a specified number of hours per week.

 - Prerequisite supports + college-level; one semester**
 - **Compressed courses:** Developmental prerequisite class is compressed into 8 weeks, and then the college-level class is compressed into 8 weeks, so that both classes are completed in one semester (classes meet for extra hours each week throughout the semester in order to equal the two classes).
 - Caution: Research clearly shows that transition points lead to attrition. If this model is utilized, students should be enrolled in the entire sequence from the beginning of the semester to minimize attrition.
 - **Boot camps:** First 3-5 weeks of the semester are remediation, followed by the college-level content (classes meet for extra hours each week throughout the semester in order to equal the two classes or class + lab).
 - Caution: Research indicates that boot camp effects are short-term and generally have “trivial negative to moderate positive effects.”
<https://ccrc.tc.columbia.edu/media/k2/attachments/improving-students-college-math-readiness-capsee.pdf>

 - Just-in-time supports; two semesters**
 - **Stretch courses:** College-level classes with the developmental content embedded, and stretched over two semesters.
 - Caution: Research clearly shows that transition points lead to attrition. If this model is utilized, consider strategies to ensure students enroll in the second semester prior to completing the first semester.

- **Staffing:** Determine whether the college-level instructor will also teach the support/developmental portion.
 - If separate instructors, what mechanisms will be in place to foster coordination between instructors?
 - What professional development time needs to be spent training instructors for this new model? What credentials will be required to teach each part of the course?

	Co-mingle prepared and underprepared students	Cohort of only students designated as underprepared
Embedded supports in extended hours (e.g. 4, 5, or 6 hours)	Not possible	Need the same instructor for the full time
Separate course, (e.g. 3 credits + 3 credits)	Can be same instructor or different instructors	Can be same instructor or different instructors

- Credit hours and financing**
 - How many hours do students attend the college-level portion?
 - How many hours do students attend the support/developmental portion?
 - How many hours do students pay for?
 - How do the hours count in the instructor’s teaching load?
- Grades:** Whether to give one grade or separate grades for the two portions. Example below from Roane State Community College in Tennessee.

	MATH 1530	Pass	Fail
MATH 0530			
Pass	Gen Ed requirement satisfied Unless other math courses are needed, remediation requirements are satisfied	Student repeats Stats Repetition of remedial class is optional.	
Fail	Gen Ed requirement satisfied Unless other math courses are needed, remediation requirements are waived	Student repeats both classes Student is very likely to lose Tenn. Promise scholarship	

Consideration 3: Co-requisite content

- What are the common learning outcomes for each college-level course that have been designated by the department and/or transfer agreements?
- What are the essential foundational concepts that students need to know in order to be successful in the college-level course? These should be backmapped from the common college-level course content and outcomes.

Consideration 4: Cultural shifts

Cultural shifts in both the college-level and the support classrooms, as well as in the overall department culture, can contribute to the narrowing of the gap between instruction and supports.

- **Collaborative work** can contribute to the formation of peer support groups.
- **Early alert systems and interventions** can increase success and decrease withdrawals.
- **Explicit instruction** in goal-setting, self-regulation, and the value of struggle can increase persistence.
- **Ongoing formative assessment** can result in early intervention and increased success.

Implementing such shifts can pay off in students' increased sense of belonging both in the class and on campus, as well as increased feelings of capability and purpose for both students and instructors.

Consideration 5: Continuous improvement

Developing a department culture of continuous evaluation and ongoing improvement of any co-requisite support model is crucial to ensure that the changing needs of students are met in the future. Set some initial data collection at the outset and revisit the plan each semester or year.

- Collect feedback on both college-level and support courses from students and faculty.
- Compare longitudinal retention and success data of co-requisite and pre-requisite structures.

<https://ccrc.tc.columbia.edu/publications/cbc-alp-student-outcomes-follow-up.html>

Reports

- Compilation of results from Complete College America: <http://completecollege.org/spanningthedivide/#home> and the Executive Summary <http://completecollege.org/spanningthedivide/wp-content/uploads/2016/01/CCA-SpanningTheDivide-ExecutiveSummary.pdf>
- Florida results (see especially the *Learning to Adapt* report): <http://centerforpostsecondarysuccess.org/publications/>
- Repository of Tennessee results: <https://www.tbr.edu/news/transforming-remedial-programs-dramatic-gains-student-success-2016-04-05>
- Complete College Georgia: <http://www.completegeorgia.org/content/about-complete-college-georgia>
- West Virginia's placement policy (specifically sections 4.1 and 4.2): http://webhost-wp.wvnet.edu/wvctcs/wp-content/uploads/sites/15/2016/05/Series_21_Final_File.pdf