

This brief describes how institutions of higher education can use Texas Success Initiative (TSI) multiple readiness designations for mathematics to improve success among underprepared students. Institutions that implement multiple readiness designations can accelerate students through mathematics pathways and ensure their appropriate placement in entry-level courses. The brief provides action steps for collaborative work among chief academic officers, mathematics and developmental education departments, information technology staff, advisers, institutional researchers, and the registrar.

## Background

In 2014, the Texas Higher Education Coordinating Board (THECB) revised rules about when and how institutions can designate students as college ready. Instead of a “one-size-fits-all” designation of college readiness, institutions can now use two designations aligned to students’ programs of study:

- ready for non-algebra intensive entry-level courses (MATH 1332 or MATH 1342), or
- ready for any entry-level course (MATH 1314, MATH 1324, MATH 1332, or MATH 1342).<sup>1</sup>

This change reflects a trend among Texas colleges and universities to offer multiple mathematics pathways that align developmental and entry-level mathematics content to students’ programs of study (i.e., statistics for social science programs, contemporary math for liberal and fine arts programs, business mathematics for business programs, calculus sequence for STEM programs).

Many institutions across the state have already adopted multiple college readiness designations for mathematics. For example, Temple College, Texarkana College, and The University of Texas Rio Grande Valley offer different developmental courses that are customized to the two readiness designations.

The following diagrams illustrate when and how each institution employs different acceleration strategies to move students efficiently towards entry-level coursework. Typically, these students move into MATH 1332 Contemporary Mathematics or MATH 1342 Elementary Statistical Methods in one semester and to MATH 1314 College Algebra within one to two semesters.

## Benefits for Students and Institutions

Research shows that accelerated developmental education that is aligned to relevant and rigorous entry-level mathematics courses increases students’ likelihood of degree completion.<sup>2</sup> Adopting multiple college readiness designations for mathematics is one

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<sup>1</sup> See 19 Tex. Admin. Code § 1.4(c) (4.59).

<sup>2</sup> The Charles A. Dana Center. (2014). *The NMP’s four guiding principles: Selected supporting research*. Retrieved from [http://www.utdanacenter.org/wp-content/uploads/nmp\\_guiding\\_principles\\_annotated\\_bibliography\\_2014june23.pdf](http://www.utdanacenter.org/wp-content/uploads/nmp_guiding_principles_annotated_bibliography_2014june23.pdf).

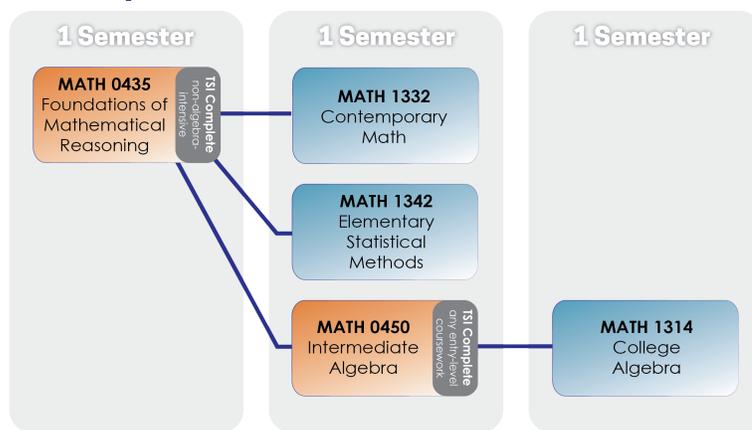
strategy to advance students' progress through multiple math pathways. Some benefits of this approach include:

- *Increasing students' likelihood of completing developmental and gateway courses* – Use of the two readiness designations accelerates student completion, especially for those who take statistics or contemporary mathematics courses for their programs of study and do not need to take Intermediate Algebra.<sup>3</sup>
- *Allowing institutions to customize developmental supports for students* – Using multiple college readiness designations for mathematics allows institutions to design aligned developmental interventions and to place students appropriately in entry-level coursework that fits the needs of their programs of study.
- *Increasing efficiency in student data systems reporting* – The prerequisite skills for different entry-level math courses vary. Using the two designations ensures that students enrolling in entry-level math courses have the skills they need to succeed and are automatically eligible or ineligible for appropriate courses. Using multiple designations ensures that students who take non-algebra intensive developmental education *cannot* go directly into

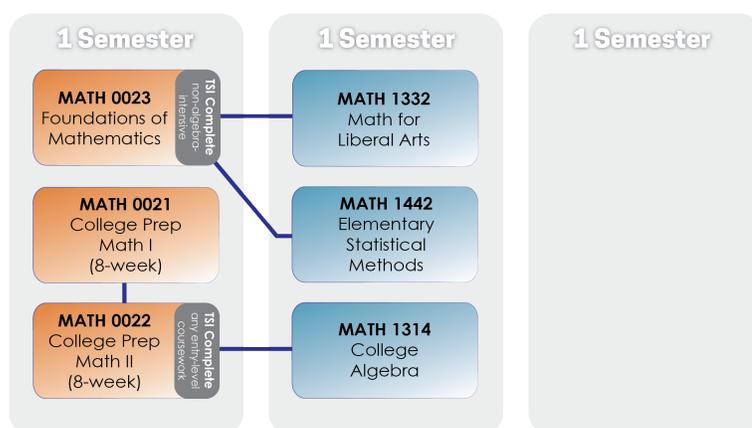
## Temple College

 **Developmental Level**

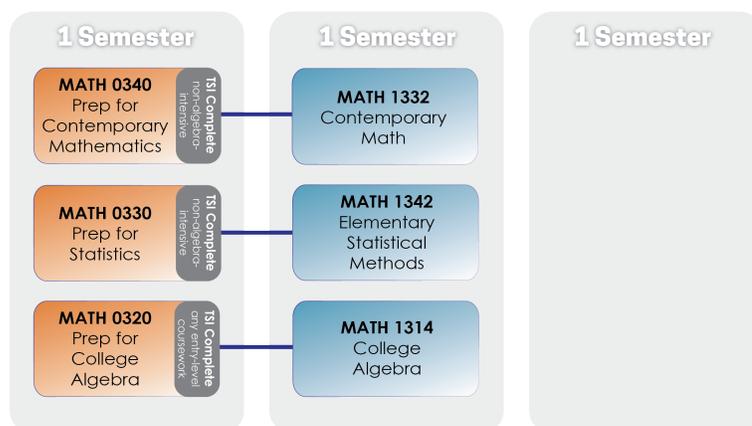
 **Entry Level**



## Texarkana College



## University of Texas Rio Grande Valley



<sup>3</sup> American Mathematical Association of Two-Year Colleges. (2014). *Position on the appropriate use of intermediate algebra as a prerequisite course*. Retrieved from <http://www.amatyc.org/?page=PositionInterAlg>.

MATH 1314 College Algebra or MATH 1324 Business Math, but they *can* go directly into MATH 1332 Contemporary Mathematics or MATH 1342 Elementary Statistical Methods.

- *Increasing efficiency in student data systems reporting* – The prerequisite skills for different entry-level math courses vary. Using the two designations ensures that students enrolling in entry-level math courses have the skills they need to succeed and are automatically eligible or ineligible for appropriate courses. Using multiple designations ensures that students who take non-algebra intensive developmental education *cannot* go directly into MATH 1314 College Algebra or MATH 1324 Business Math, but they *can* go directly into MATH 1332 Contemporary Mathematics or MATH 1342 Elementary Statistical Methods.
- *Facilitating seamless transfer between institutions* – Identifying multiple readiness designations on student transcripts assists placement of underprepared students in entry-level courses, even if they transfer. Developmental education courses often do not appear on transcripts and can be difficult to interpret as each college uses different course numbers and names for developmental sequences.

## Action Steps

Recognizing the success of Temple College, Texarkana College, and The University of Texas Rio Grande Valley in using the revised TSI readiness designations, we interviewed faculty and administrators from those institutions to develop the following suggested action steps:

1. **Align developmental courses and interventions to support success in algebra intensive and non-algebra intensive entry-level math courses.** Map the most appropriate entry-level college math course to all programs of study. Backward map the content of developmental courses or interventions to develop the skills needed in appropriate entry-level courses. Many institutions offer a one- or two-semester, algebra intensive developmental experience for entry into college algebra or business mathematics, and a one-semester, non-algebra intensive course for entry into statistics or contemporary mathematics.
2. **Convene stakeholders to create an implementation plan.** Establishing institutional policy for multiple TSI readiness designations requires buy-in and shared understanding among department leaders. Based on the approval process at your institution, determine if additional stakeholders should be involved. At Temple College, for example, the chief academic officer held a meeting with the directors of key departments, including mathematics, developmental education, information technology, advising, institutional research, and the registrar, to develop a timeline and action steps for implementation.
3. **Update student information systems, advising resources, and student transcripts.** Once an implementation plan has been developed, staff across campus will need to collaborate to ensure that systems and resources are revised to communicate the change consistently. At Texarkana College, the director of advising and registration coordinated with the dean of STEM to revise advising materials and placement policies to reflect the multiple college readiness designations. At Temple College, student data

systems were programmed to mark students automatically as TSI complete for either algebra intensive or non-algebra intensive coursework after completing the corresponding developmental sequence. At both institutions, students' specific TSI status is recorded on student transcripts.

4. **Coordinate with transfer partners to ensure that students preserve credit and enroll in the appropriate entry-level course.** Transfer partners should share sample course sequence diagrams, sample transcripts, and advising supports to clearly communicate the meaning of each TSI readiness designation. The three institutions showcased in this brief have developed memoranda of understanding with transfer partners, clarifying how the institution uses multiple TSI readiness designations.

## Conclusion

As institutions move to adopt multiple TSI readiness designations, leaders will need to address several common concerns about the policy shift. One concern, for example, pertains to whether a student could earn a TSI readiness designation for non-algebra intensive coursework and subsequently switch majors to a program that requires algebra. Although data demonstrate that it is extremely rare for students to shift from a non-algebra intensive major to a program that requires algebra, institutions would still need to consider how to plan for this contingency. State policy gives institutions the flexibility to decide which interventions best serve the needs of students. Institutions can require students who are TSI complete for non-algebra intensive courses to complete an additional developmental course to ensure that they are prepared for college algebra; however, these interventions are not mandated by state policy. The University of Texas Rio Grande Valley offers a bridge course for students to shift quickly and seamlessly from a non-algebra intensive pathway to an algebra intensive pathway.

Another concern is that keeping track of multiple readiness designations may be confusing and difficult to manage. However, institutions that have made the shift find the opposite to be true. The use of multiple designations can be automated in student data systems. If institutions only have one readiness designation that identifies students as TSI complete after finishing intermediate algebra, then advisors and the registrar will have to manually enroll or provide permission for students who take non-algebra intensive developmental interventions before entering MATH 1332 and MATH 1342.

These types of questions and concerns may be resolved through the coordinated effort of campus leaders. Many institutions across Texas have already made the shift to use multiple TSI readiness designations for mathematics. Given the benefits both to students and institutions, the opportunity to streamline the transfer process, and the need to have consistency in TSI reporting across institutions, it is imperative that colleges and universities follow the example of the institutions that are leading this change effort.