



# Transitioning Learners to Calculus in Community Colleges

## Institutional Self-Assessment Tool

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Transitioning Learners to Calculus in Community Colleges (TLC3) is a research project aimed at transforming the way colleges identify and remove barriers for underrepresented racially minoritized student (URM) transitioning into and through mathematics courses required for degrees in STEM (Science, Engineering, Technology and Mathematics). Here we present a validated set of practice that may positively influence URM student success in the STEM mathematics pathway. Colleges committed to improving racial equality in mathematics attainment can self-assess the degree to which they have implemented these practices and identify next steps to enhance their efforts to support URM students in the STEM math pathway.

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### 1. Mathematics Placement

Multiple measures used for placement, including high school transcripts

Advising about the placement process and results is given to students

Policies and practices ensure highest possible placement (e.g., retesting, test-prep resources, adjusting after term begins)

### 3. Instruction

#### Relational Instruction Practices

Authentic care and welcomeness to engage are expressed to students

Student questions and concerns are validated and addressed in a timely fashion

What students find helpful or hindering in their college and math courses is well-known and understood by mathematics faculty

Performance monitoring techniques are used consistently (e.g., feedback on learning, reminders about deadlines, etc.)

### 4. Student Support

Current grade standing is available to students throughout the term

Dedicated space is available on campus for students to gather and work together on mathematics

Math tutoring and instructor office hours are available and easily accessible to students

Relevant support services are highlighted in syllabi and during instruction (e.g., tutoring, disability services, transfer advising, wellness center)

### 2. STEM Math Pathway Courses

The course sequence and required course materials in the STEM math pathway are optimized for timely progress

Courses are designed to transfer to baccalaureate institutions

Data on student outcomes in STEM math pathway courses, disaggregated by race/ethnicity within gender, are reviewed at least annually by mathematics faculty

#### Mathematical Instruction Practices

Student active involvement in problem solving is central to mathematics instruction

Students are invited to discuss or share their thinking about mathematics with each other

The relevance of mathematics (to careers, personal lives, etc.) is made explicit to students during class or in class materials

The mathematical content and tasks are challenging in terms of cognitive demand

### 5. Institutional Responsibility

Permanent base funding is provided by the college to bolster and support the success of URM students in the STEM math pathway

High-quality and ongoing professional learning focused on inclusive teaching strategies, implicit bias, and racial microaggressions is provided to full- and part-time mathematics faculty

Targeted efforts are undertaken by the college to provide resources for students facing food, health, and housing insecurities (e.g., food pantry, free walk-in clinic, emergency financial assistance)

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In two-year colleges, students transition into the STEM (Science, Technology, Engineering, and Mathematics) math pathway through a college's mathematics placement process. Required coursework can range from developmental mathematics up to or through precalculus, calculus I and calculus II. The practices presented here were developed based on mixed-methods research comprising a National Survey of Community College Mathematics Chairs (<https://eric.ed.gov/?id=ED592079>), case studies of mathematics programs in four Minority-Serving Institutions: a Predominantly Black Institution, a Hispanic Serving Institution, an Asian American, Native American and Pacific Islander Serving Institution, and a Tribal College, and content validation by the TLC3 advisory board.

Support for this work is provided by the National Science Foundation's Improving Undergraduate STEM Education (IUSE) program under Awards 1625918, 1625387, 1625946, 1625891. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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