

An Overview of the NMP Pathways in Texas

The NMP in Texas

The New Mathways Project (NMP) is a systemic approach to improving student success and completion through implementation of processes, strategies, and structures built around three accelerated mathematics pathways and a supporting student success course. Our work is based on four fundamental principles:

1. Multiple pathways with relevant and challenging mathematics content aligned to specific fields of study
2. Acceleration that allows students to complete a college-level math course more quickly than in the traditional developmental math sequence
3. Intentional use of strategies to help students develop skills as learners
4. Curriculum design and pedagogy based on proven practice

Through its partnership with the Texas Association of Community Colleges, the Dana Center is working with all 50 community college districts in the state. We are also working with state-level leaders to make recommendations for coherent policies and practices to support the principles of the NMP and specifically to address issues such as legislation, placement, articulation, and funding. This includes outreach to 4-year institutions in Texas. Our work will provide a model for similar initiatives in other states.

The NMP Pathways

The Dana Center is charged with developing materials and services to make it possible for all of the community colleges in Texas to implement reform based on the four principles above. Development of curricular materials for courses is a key aspect of that support.

The NMP's three pathways—Statistics, Quantitative Literacy, and STEM-Prep—enable students placed into developmental mathematics to complete a credit-bearing, transferable mathematics course on an accelerated timeline, while simultaneously building skills for long-term success in college and in life.

The initial version of the NMP pathways will be structured as shown in Figure 1 and is designed for students who have completed Arithmetic or who are placed at a Beginning Algebra level. The three pathways have a common starting point, *Foundations for Mathematical Reasoning*. This developmental course will help students develop foundational skills and conceptual understanding in the context of college level course material. These skills include numeracy, proportional reasoning, algebraic reasoning, descriptive statistics, and basic probability and modeling.

Students in the *Foundations* course will also enroll in a co-requisite, college-level learning frameworks course, *Frameworks for Mathematics and Collegiate Learning*. This course teaches concepts from the learning sciences to help students acquire the strategies and tenacity necessary to succeed in mathematics, in other college coursework, and in their future careers. These concepts will be applied, practiced, and reinforced in the mathematics courses.

As an outcome of the *Frameworks* course, students will learn about different careers, set academic goals, and create a completion plan, which will include selecting the correct mathematics pathway for their goals. Students will then register for the next course in the pathway.

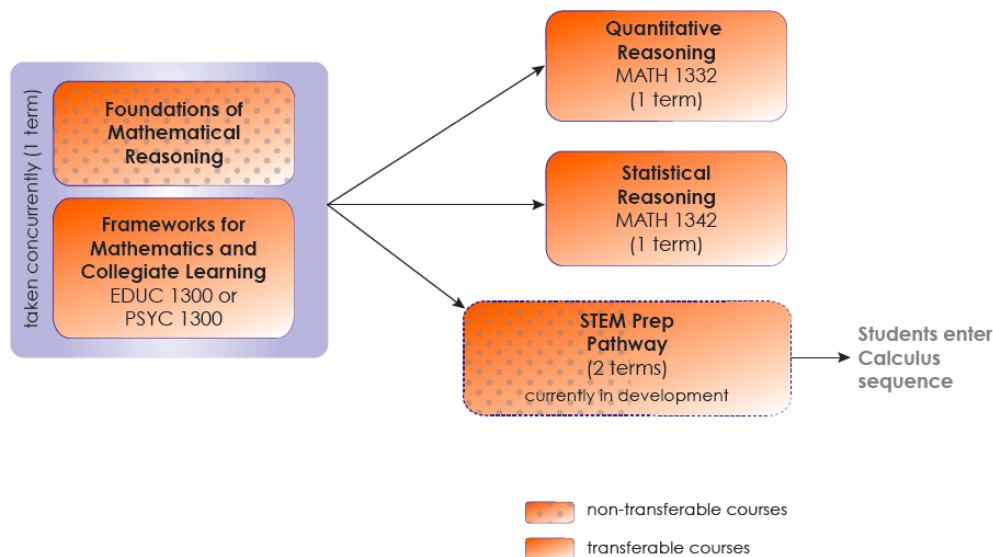


Figure 1: NMP Courses

The two non-STEM options are college-level courses: *Quantitative Reasoning* and *Statistical Reasoning*. In Texas, these courses fall under the ACGM designation of Math 1332 and Math 1342, respectively. STEM majors will take a two-course sequence of *Algebraic Reasoning I* and *II*. Some technical certificate programs may only require *Algebraic Reasoning I*, which is roughly equivalent to Intermediate Algebra, but students going on to Calculus will take both courses. Students may also place directly into *Algebraic Reasoning I*. The ACGM designation for the *Algebraic Reasoning* sequence will be determined when early development begins. The NMP will also include a “bridge course” that allows students who start in the statistics or quantitative reasoning pathways to change to the STEM-prep pathway.

The concept of a “pathway” is found in the development of the curricular materials that are based on common design principles, structures and organization. Consistent expectations, use of terminology and integration of student success strategies create a coherent and consistent experience for students as they move through a sequence of courses.

The first set of NMP curricular materials will be designed for a classroom-based delivery with online materials to facilitate classroom activities and discussion and out-of-class learning. Over time, the Dana Center will develop materials to support different delivery methods and course sequence structures such as one-semester co-requisite or hybrid courses that will fit the needs of different populations.

In addition to the curricular materials described above, the Dana Center will develop a suite of technical assistance tools and services that will support institutions in the implementation of the NMP. The technical assistance will utilize multiple delivery methods and will target four key constituencies: administration, faculty, institutional research, and student support services.

The NMP curricular materials will be implemented in selected Texas colleges on the following schedule: statistics pathway in Fall 2013, quantitative reasoning pathway in Fall 2014 and the STEM-prep pathway in Fall 2015.

To learn more on the structure of the course and to receive updates on the Dana Center's New Mathways Project and our work in early college mathematics reform, see our website at www.utdanacenter.org/mathways or contact us at mathways@austin.utexas.edu