COREQUISITE MATH CLASSES AT CLATSOP AND CHEMEKETA COMMUNITY COLLEGES

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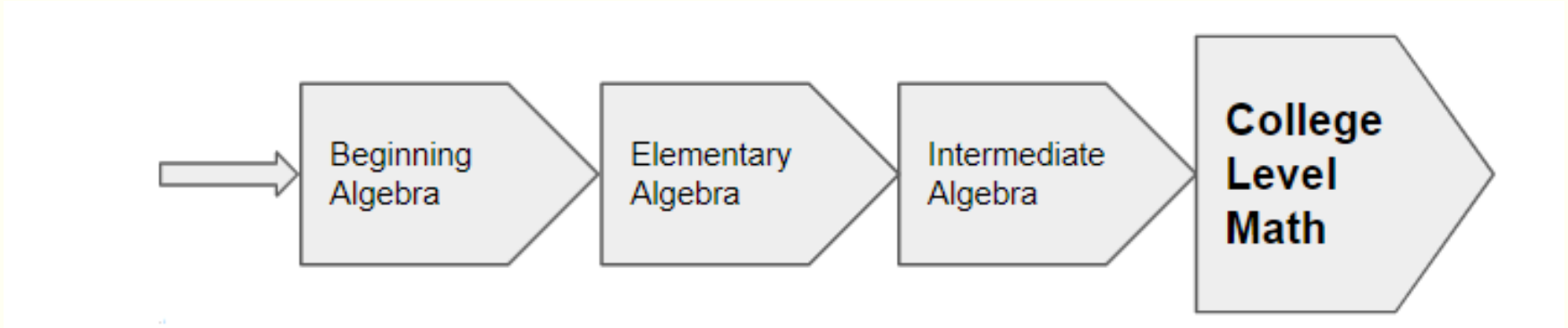
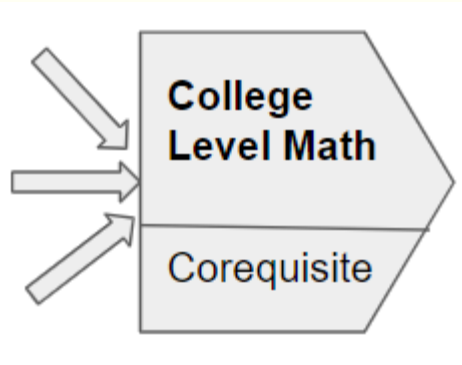
What is a Corequisite Approach?

Traditional Prerequisite, Multi-Term Developmental Mathematics Approach
Students are assigned to a sequence of developmental courses that must be completed before they enroll in a college level course.

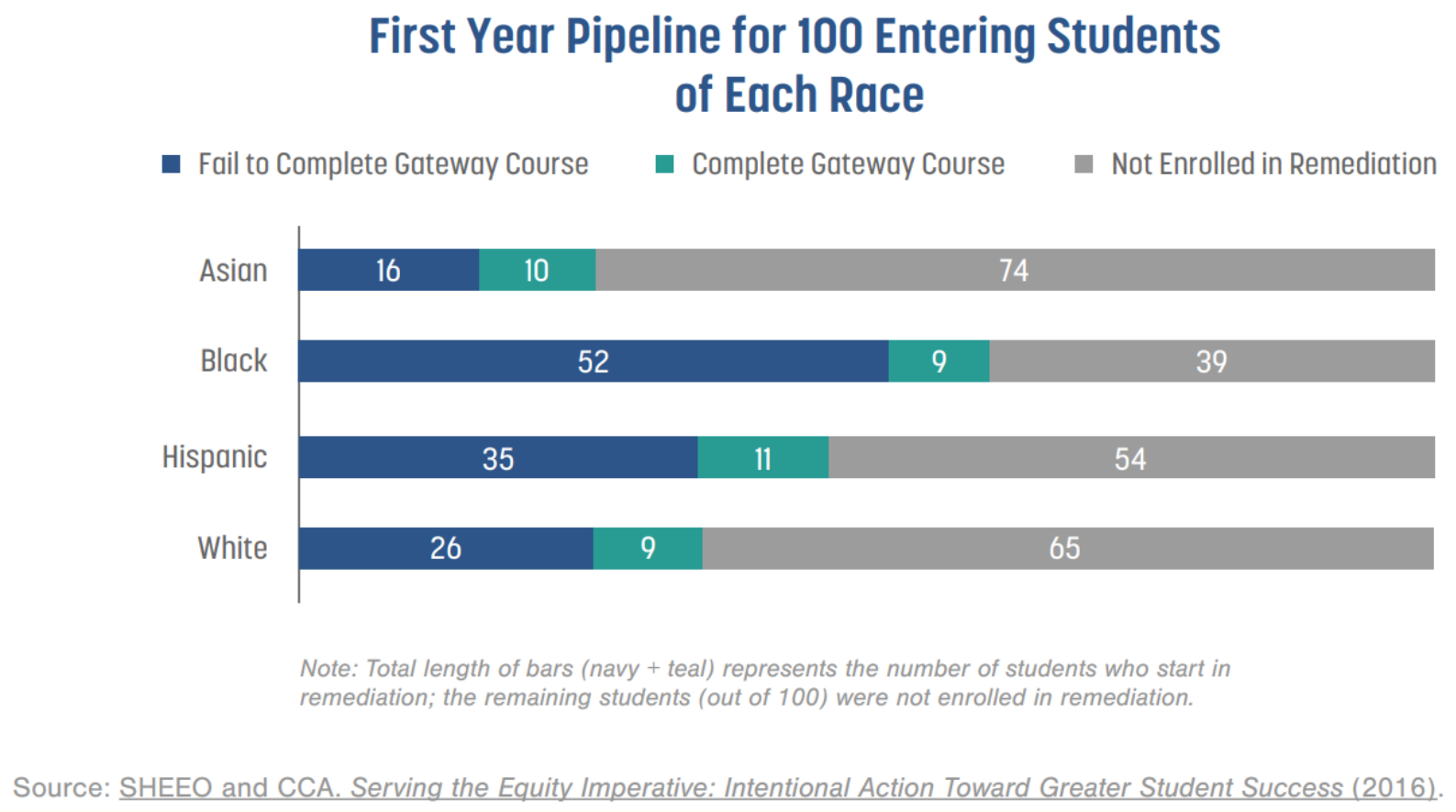


Corequisite Approach
Students enroll in college level math and a corequisite support class at the same time to reduce or eliminate the need to enroll in a sequence of developmental courses.



Why a Corequisite Approach?

Low success and persistence rates through developmental math sequences have been well documented.



Source: SHEEO and CCA. *Serving the Equity Imperative: Intentional Action Toward Greater Student Success* (2016).

Why a Corequisite Approach?

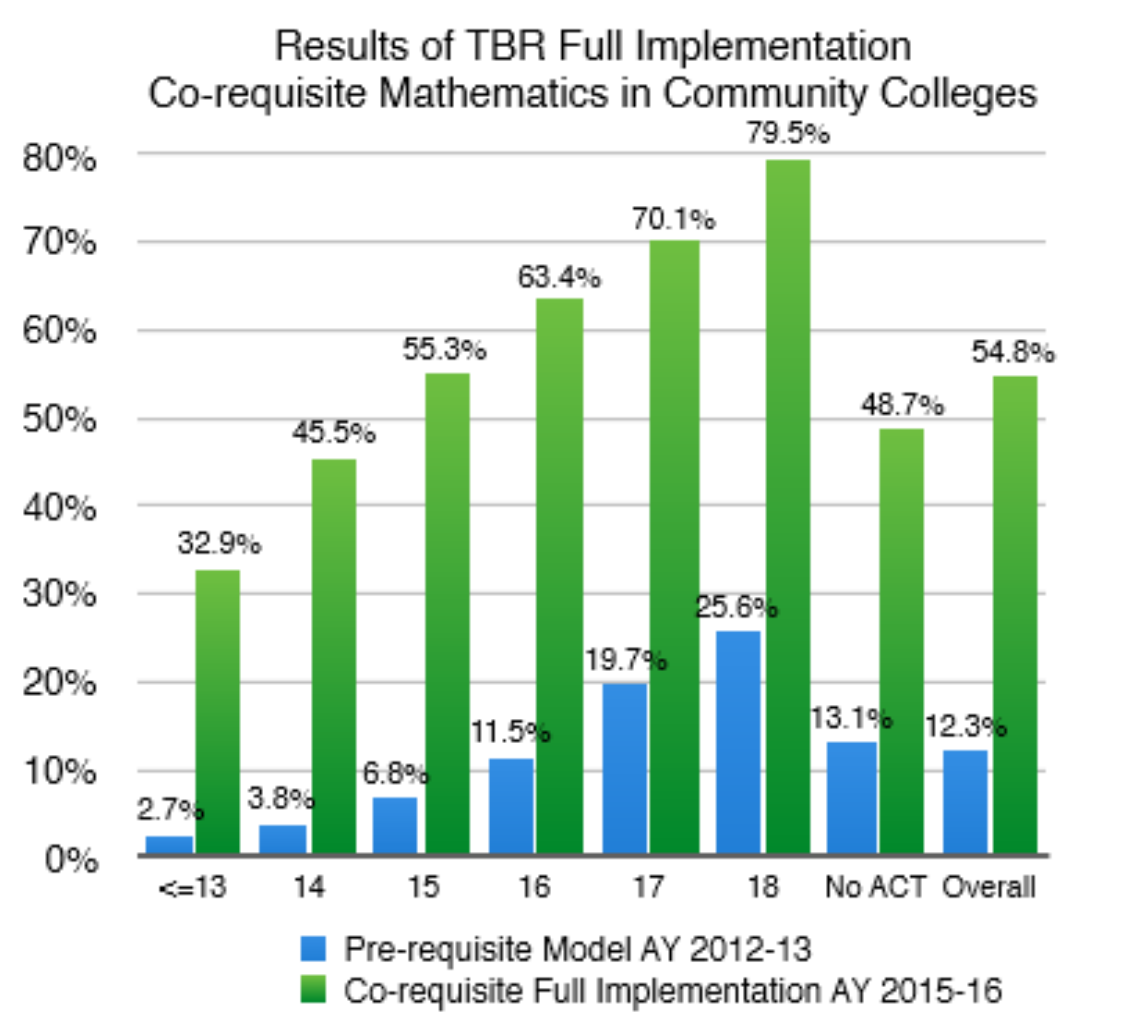
In a 2015 Oregon study, researchers found that nearly 75% of recent high school graduates who enrolled in community college and graduates who delayed entry with no prior college experience took at least one remedial course. After five years, 63% of students who started in a college-level math course were still enrolled or had earned a credential, while only 22% who started at pre-algebra levels and 49% who started in Intermediate Algebra had persisted. The differences in rates of student retention are concerning, especially given that data indicated Black, Latino/a/x, and Indigenous students are disproportionately enrolled in developmental education.

Why a Corequisite Approach?

Research supports the use of corequisites as a promising approach to help underprepared students achieve academic success. Study after study has shown higher course pass rates in corequisite remedial courses than traditional remedial courses, including with college-level courses in Mathematics, reading, writing, chemistry, and even contextualizing Math in sociology.

For example: A Tennessee statewide reform study on the effectiveness of a system-wide approach in community college math, writing, and reading-intensive courses indicated significant increases in passing grades for all demographic levels, but particularly for underserved, adult, and low-income students.

Corequisite Models Have a Track Record of Success



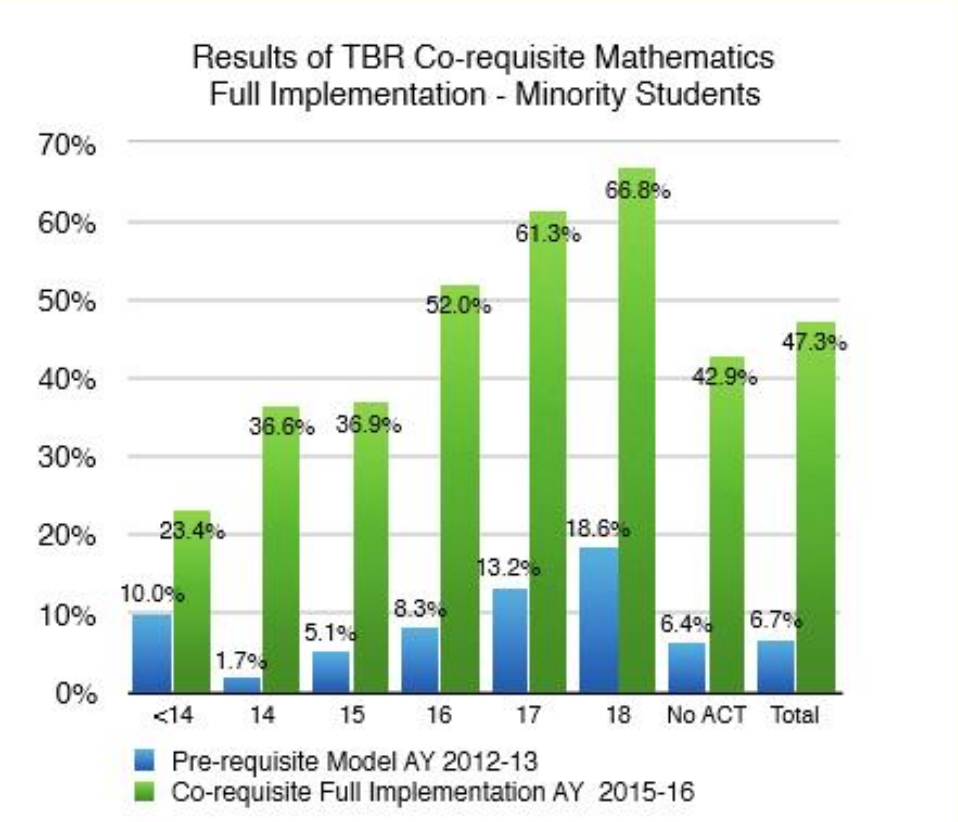
The Tennessee Board of Regent began requiring corequisite courses starting in 2015. Overall 55% of community college students who took a co-requisite mathematics received a passing grade in their transferable mathematics class, with 52 percent passing in their first semester. This is a more than four-fold increase over the original pre-requisite model, in which only 12.3 percent of those students achieved that same passing grade in an entire academic year.

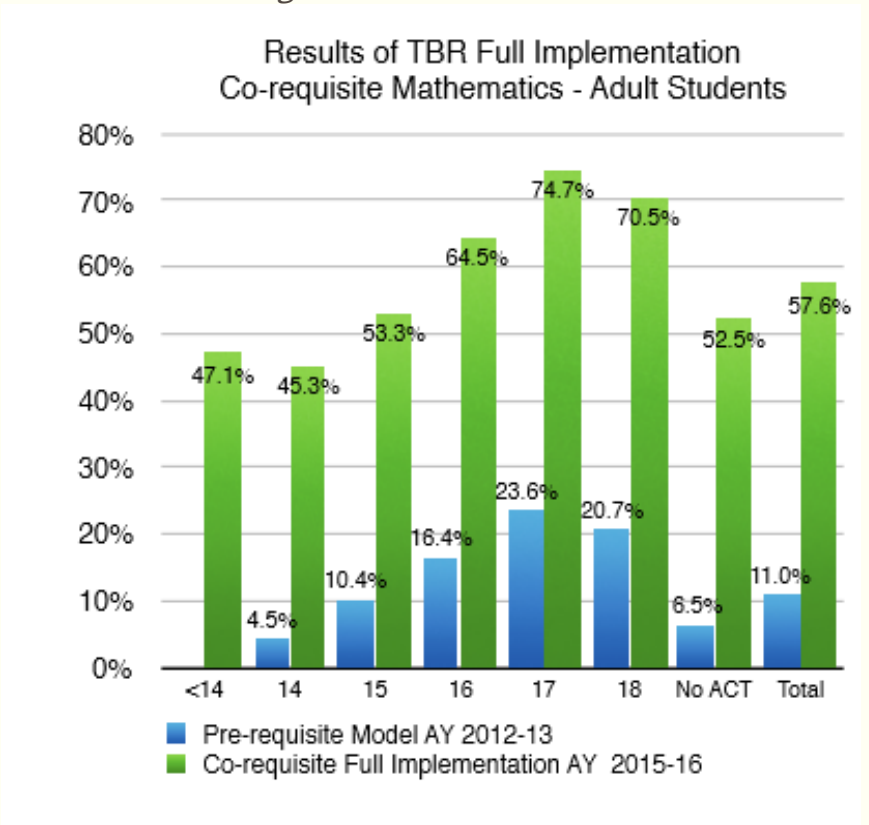
Tennessee Board of Regents Technical Brief No. 3 – Tristan Denley

Corequisite Models Support Equity

Results of the corequisite implementation for minority students showed that success rates rose by more than 47.3% with 42.6% of students passing the transferable course in the first semester. Results for adult students showed more than a 5-fold increase going from 11% to 56.7%.

Tennessee Board of Regents Technical Brief No. 3 – Tristan Denley





COREQUISITE FOR MATH 105 AND MTH 111 AT CLATSOP

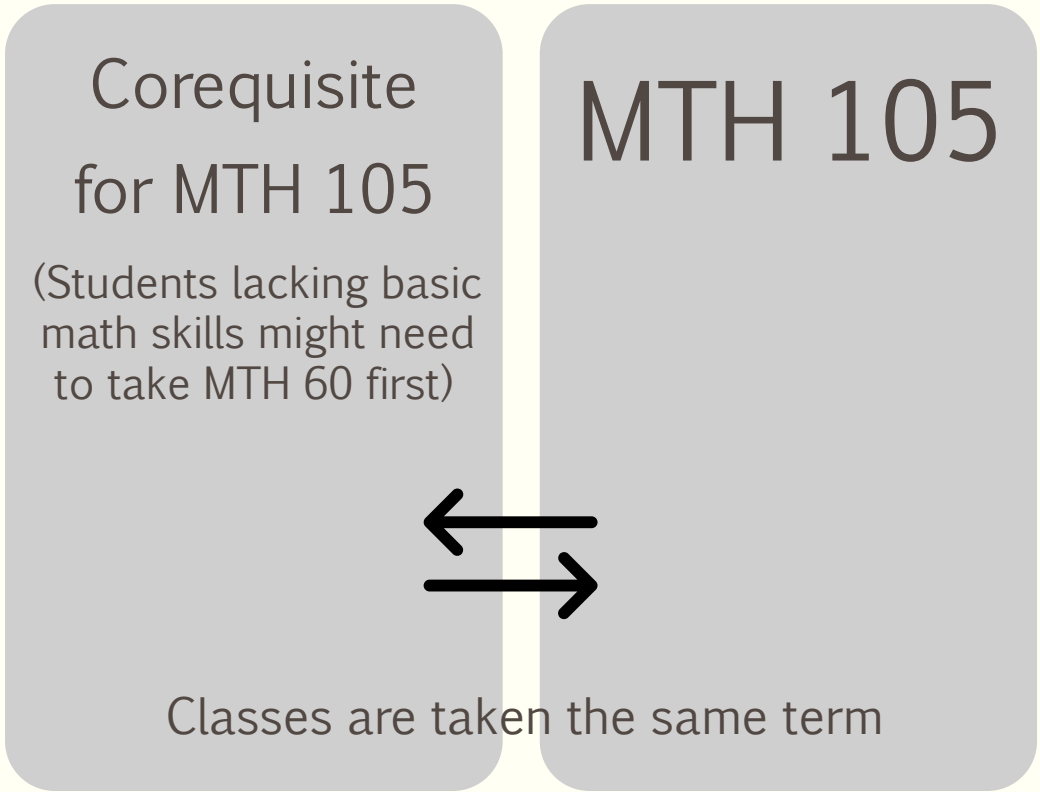
Pathway to MTH105

The previous path of a non-stem major with limited math background

Students could opt to take MTH 70 and MTH 95 instead of MTH98

3 - 5 terms to pass a college-level math class.

The new path of a non-stem major with limited math background



1 – 2 terms to pass a college-level math class.

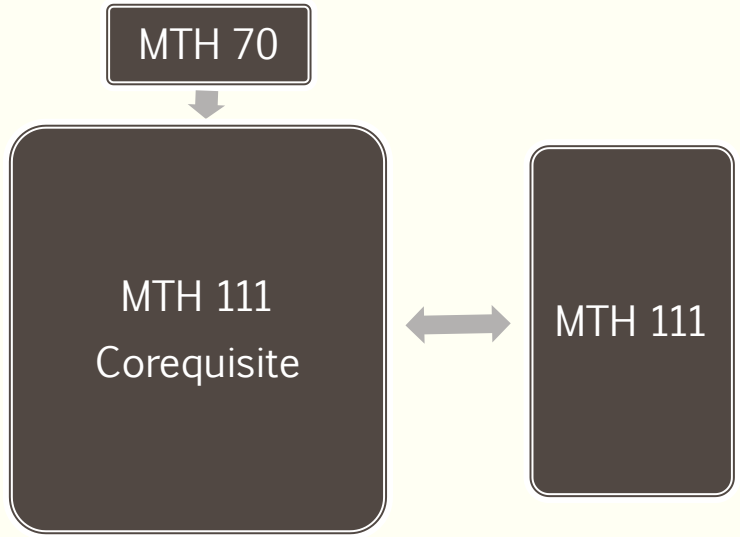
Pathway to MTH 111

The previous path of a stem major with limited math background

Students lacking basic math skills might need to take MTH 60 first

3 terms minimum to pass a college-level math class.

The new path of a non-stem major with limited math background



Classes are taken the same term

2 terms to pass a college-level math class.

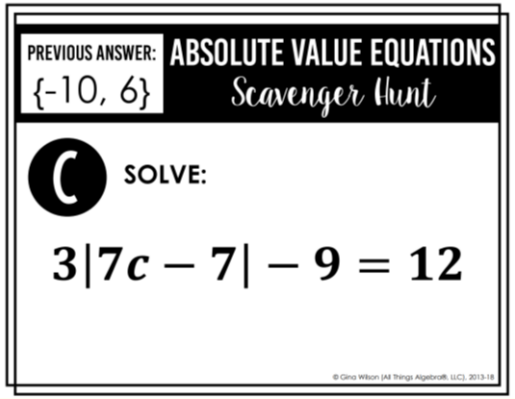
Course Placement

Algebra 2	A/B	N/A	MTH105/111/211/243 (MTH 199 Highly Suggested)
Algebra 2	C	3.3. or higher	MTH105/111/211/243 (MTH 199 Highly Suggested)
Algebra 2	C	Lower than 3.3	MTH 95/105/111 (MTH 199 Required for 105 or 111)
Algebra 1	A/B	Higher than 3.3	MTH 70, MTH 98, MTH 105 (MTH 199 required for MTH 105)

Example from Corequisite and MTH 111 earlier this term

Corequisite Class (Tuesday)

- Quick Review of Solving Inequalities (We had talked about this previously)
- Short Lecture on how to solve absolute value equations.
- Class Activity, Absolute value scavenger hunt.



MTH 111 (Wednesday)

- Review of Interval Notation
- Lecture on Solving Absolute Value Inequalities.
- Group activity: Absolute value inequality maze.

(Corequisite students were also assigned to submit all answers from the problems in this maze in interval notation during the previous class)

Corequisite Usual Class

Soft Skills

Short Lecture

Q & A time about the topic

Group Activity (not handed in)

Open Q & A time

Graded assignment (often self correcting)

COREQUISITE FOR MATH 105 AT CHEMEKETA COMMUNITY COLLEGE

Chemeketa's Non-STEM Math Pathway

	Term 1	Term 2	Term 3	Term 4	Term 5
Prior to Fall 2021	MTH 60 4 credits	MTH 70 4 credits	MTH 95 4 credits	MTH105 4 credits	MTH 243 (if needed)
Beginning Fall 2021	MTH 60 (If needed)	MTH 105 4 credits + MTH 105A 1 credit	MTH 243 (if needed)		

Goal: Increase the number of students successfully completing college level math (specifically MTH 105) within 1 year.

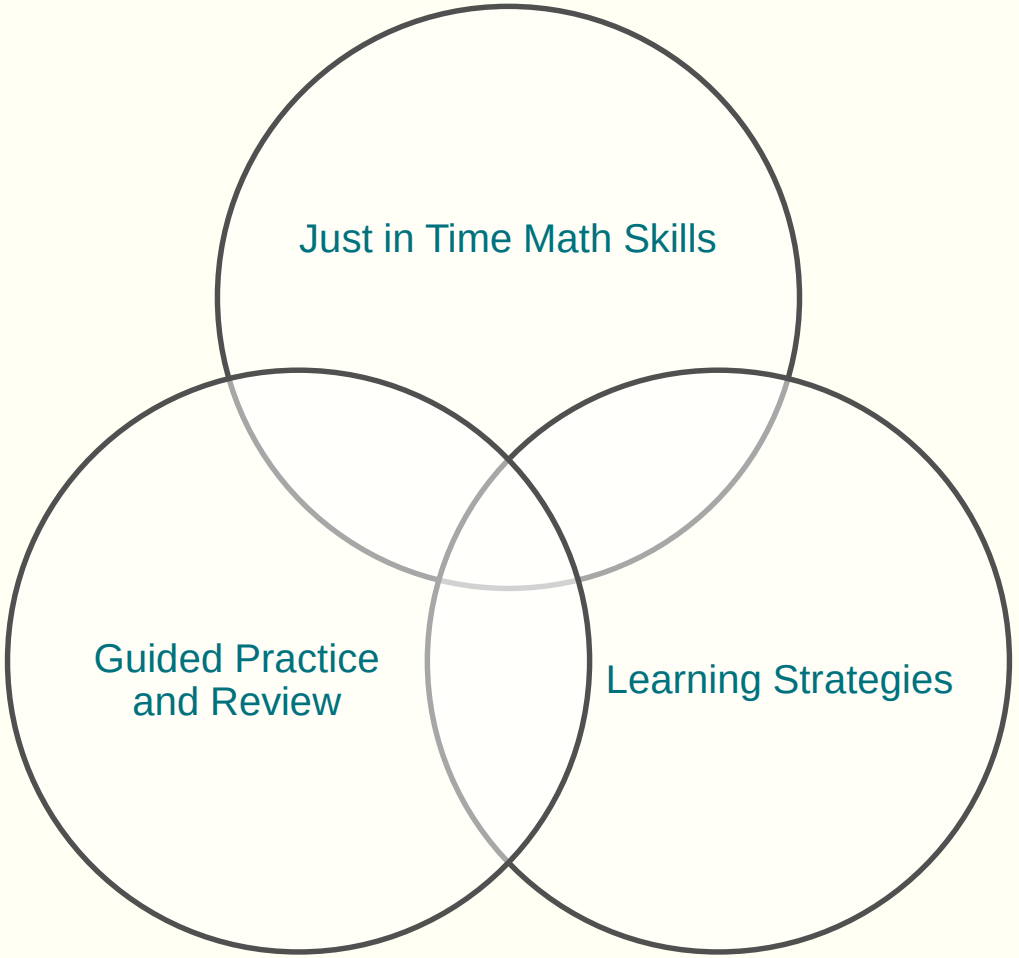
About MTH 105 with Corequisite Support

Placement into MTH 105 with Corequisite Support

- **Via Multiple Measures:**
  Completion of algebra 1 in high school
  Over 95% of incoming fall 2021 multiple measures cohort qualified to enroll.

- **Via Placement Assessment or Prerequisite:**
  Completion of MTH 60 or placement into MTH 70
  78% of incoming fall 2021 cohort placed via Chemeketa's placement test qualified to enroll.

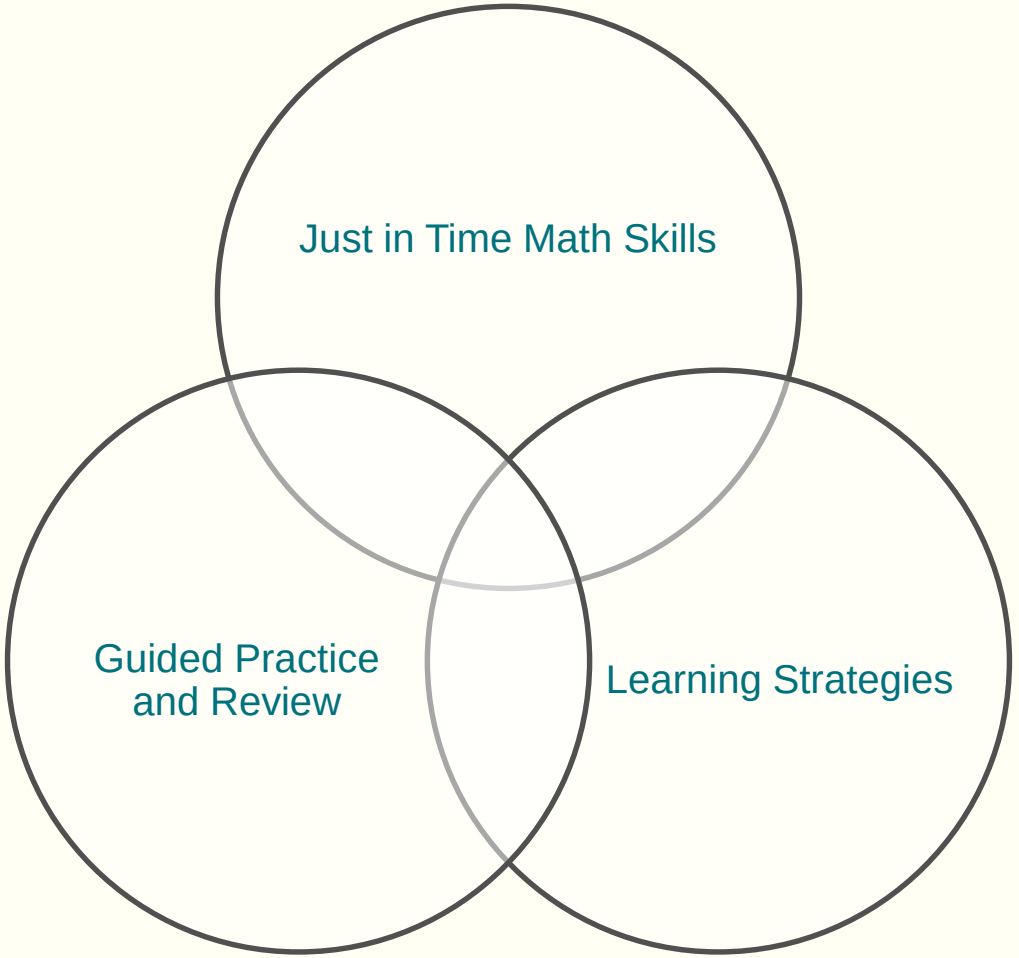
About MTH 105 with Corequisite Support



MTH 105A Course Description:

This support course focuses on the foundational skills and concepts needed to be persistent and successful in MTH 105 (Math in Society). Students will receive appropriate support in arithmetic, algebra, problem solving, technology, and study skills in an interactive setting.

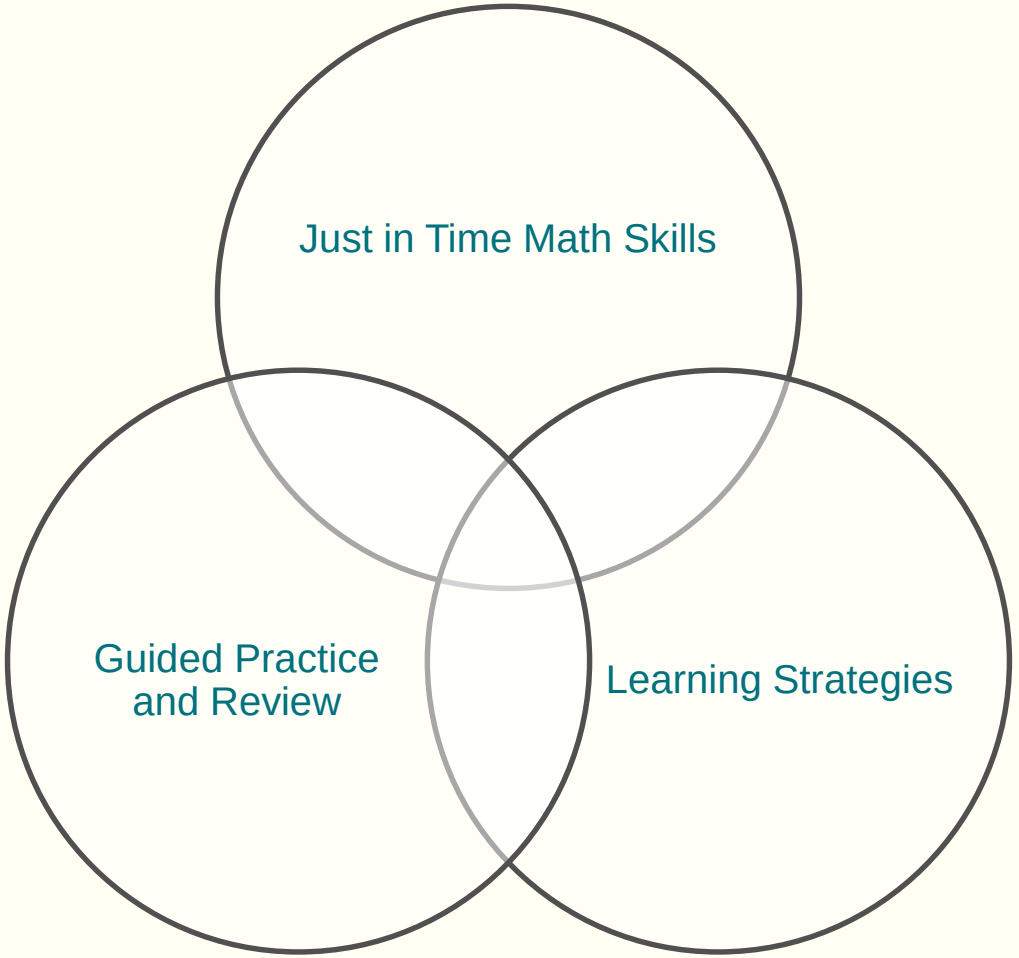
About MTH 105 with Corequisite Support



MTH 105A Learning Outcomes:

- **Demonstrate relevant skills to effectively engage with the concepts and skills needed in MTH 105.**
- **Reflect on and improve their proficiency with the MTH 105 content.**
- **Utilize study habits and learning strategies that promote success in MTH 105.**

About MTH 105 with Corequisite Support



Typical Week in MTH 105A:

- **Group and individual work on review/practice problems from recent MTH 105 topics.**
- **Group and individual work on problems to prep for upcoming MTH 105 topics.**
- **Activity, discussion, presentation about non-math components of learning and success.**

About MTH 105 with Corequisite Support

Scheduling Details:

- **MTH 105A meets 3 hours each week (1 credit)**
- **MTH 105 meets 4 hours each week (4 credits)**
- **Each MTH 105A section is paired to exactly one section of MTH 105. Same instructor teaches both MTH 105 and MTH 105A.**
- **Blended model: Some students in a particular MTH 105 course are also in the paired section of MTH 105A. Others are not.**

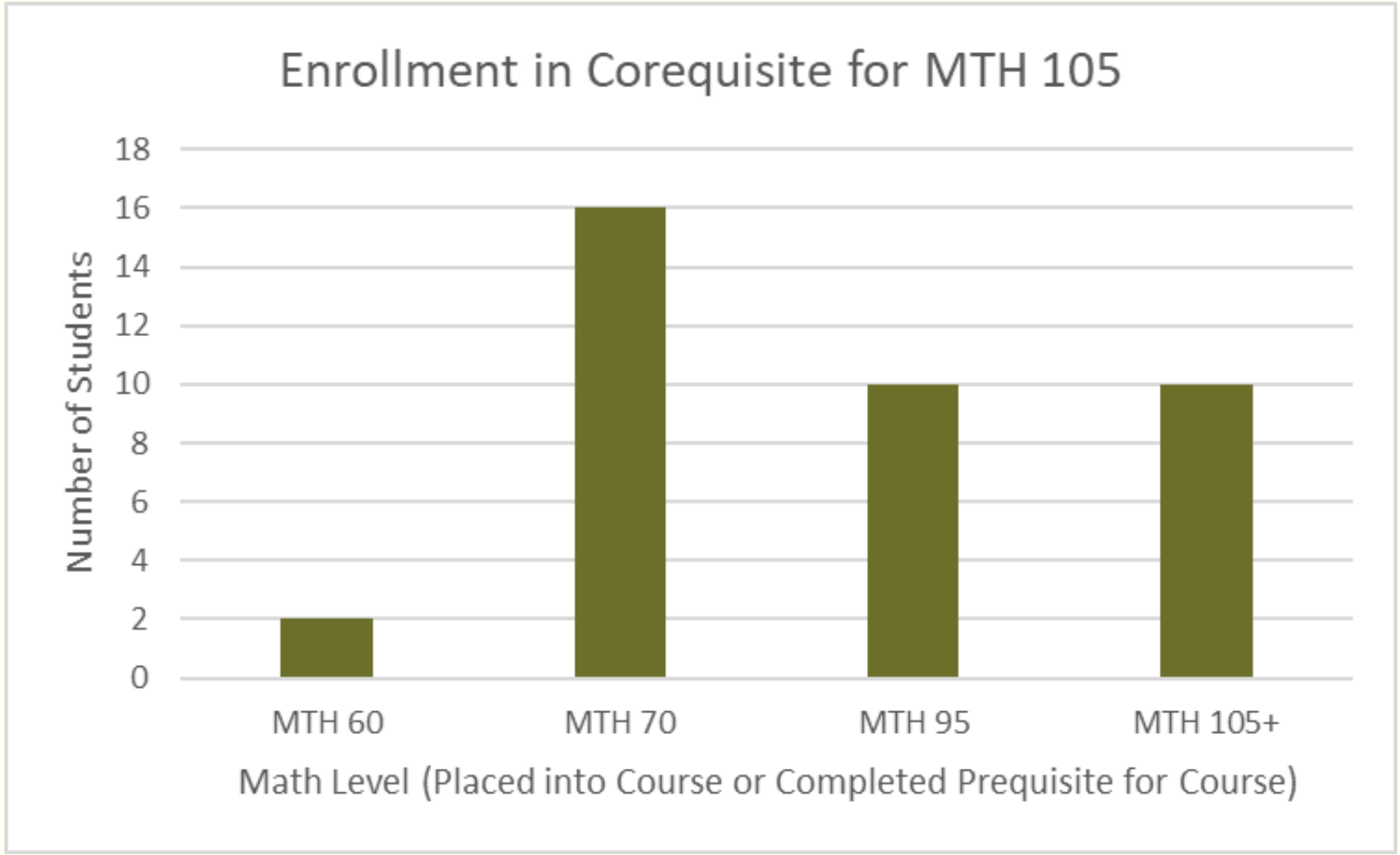
Curriculum Development Process

- **Backward course design**
  Started with the content and outcomes for MTH 105 and mapped back to create meaningful learning experiences in MTH 105A.

- **Focus on collaborative and interactive learning experiences in MTH 105A.**

- **Worked with a Study Skills faculty member to create activities addressing learning strategies and affective components of success.**

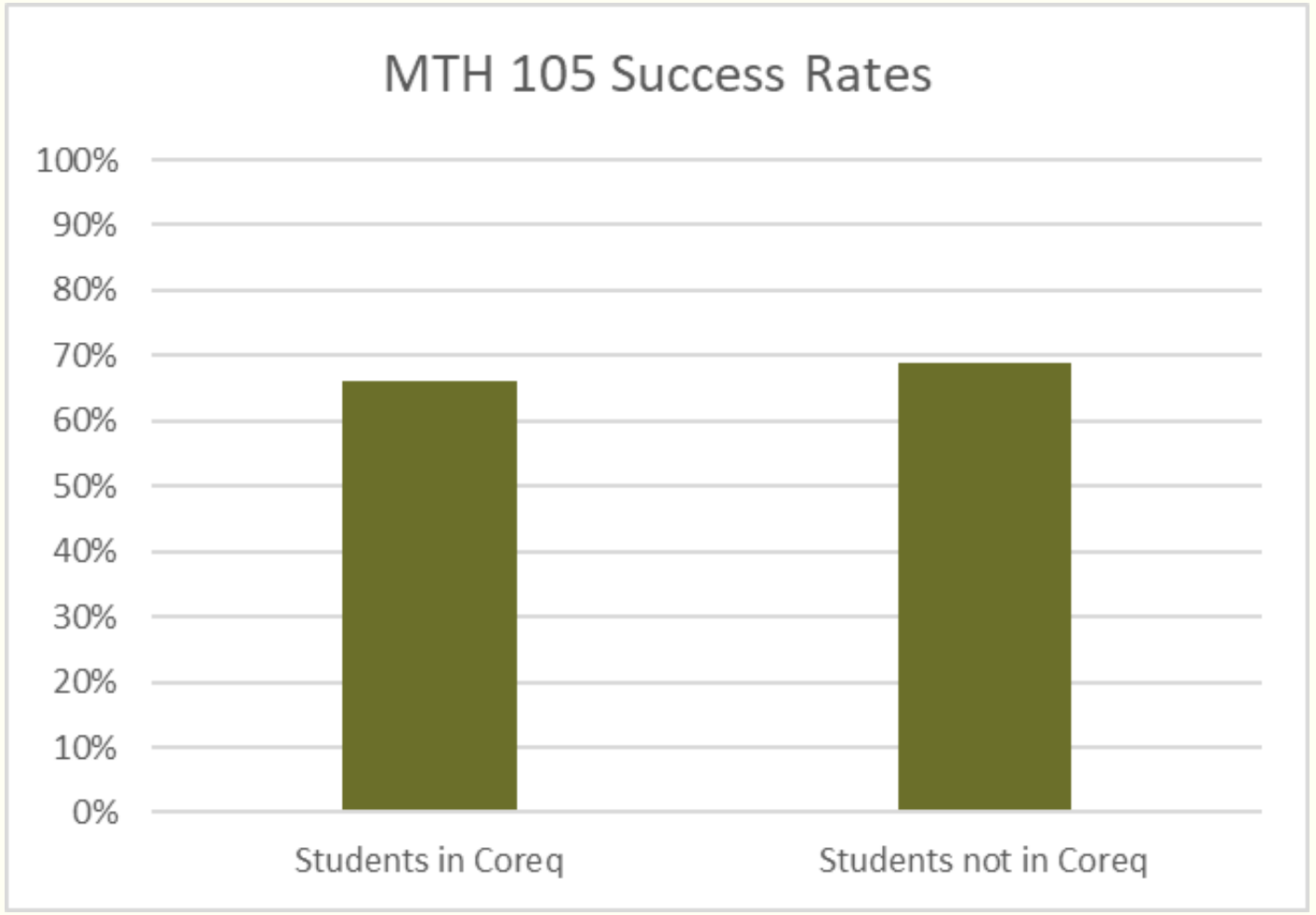
Initial Results (Fall 2021)



Initial Results (Fall 2021)

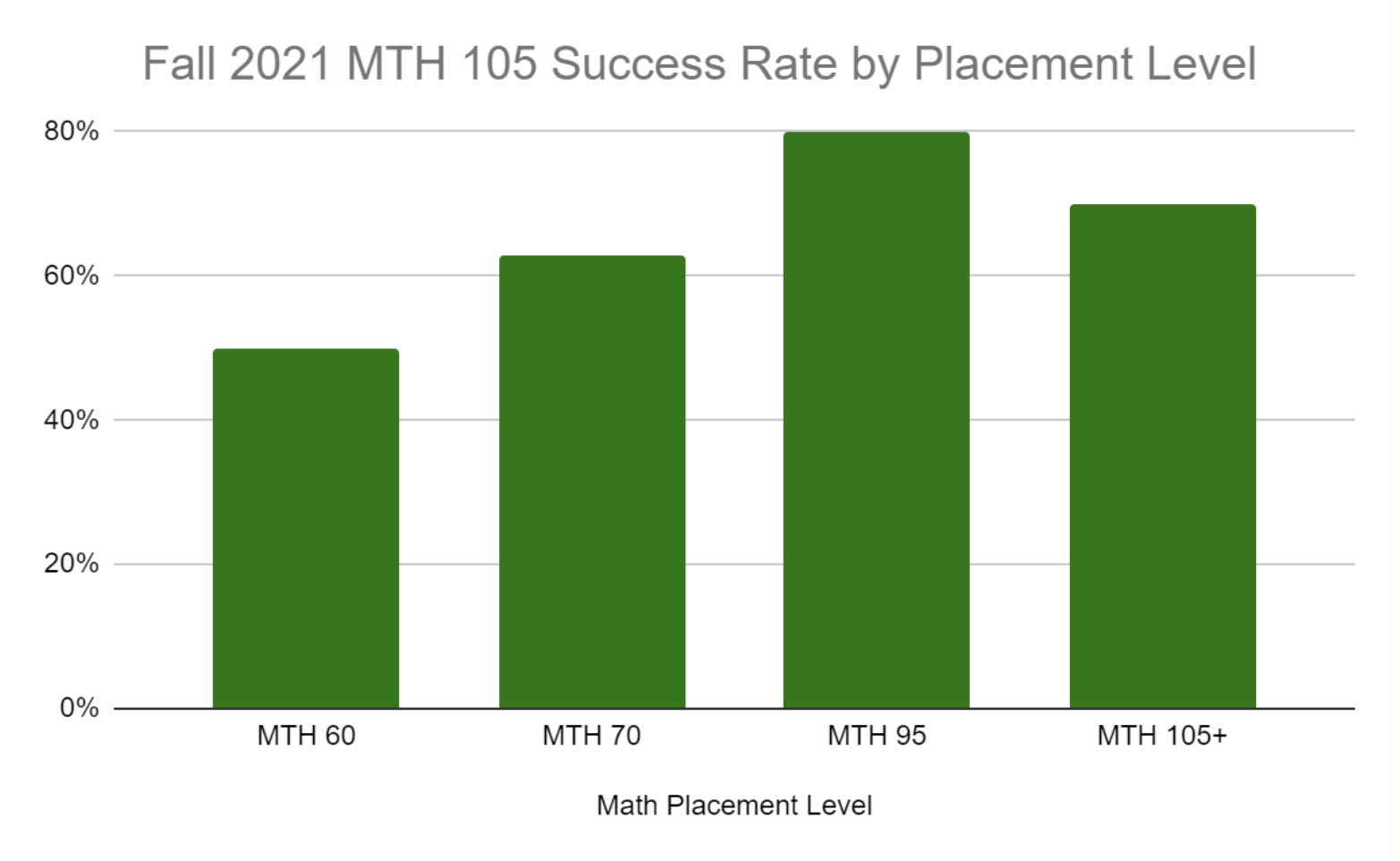
Success rates for students in the corequisite course were comparable to success rates for students not in the corequisite course.

This is not necessarily a fair comparison.



Initial Results (Fall 2021)

Success rates were correlated with placement level.



Initial Results (Fall 2021)

A more fair comparison for measuring success is the rate at which we would have expected these students to persist to a college level math class.