NEVADA SYSTEM OF HIGHER EDUCATION

Launch Years Initiative

Next Steps Nevada

Math pathways that meet students where they are—and take them where they want to go

May 2025

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About the Nevada Launch Years Initiative Task Force

After more than a decade of reform efforts (see appendix), the seven teaching institutions of the Nevada System of Higher Education (NSHE) launched a statewide, full-scale implementation of corequisite remediation in Fall 2021. Encouraging results from the first two years of implementation reflected an increase in students earning a C or better in their gateway math course within their first two semesters of enrollment—across all institutions and student populations when disaggregated by Pell recipient status, age, sex, or race/ethnicity.

However, it is important to acknowledge that, for some students, the corequisite model as implemented is not sufficient to support success. This is why, with an eye toward continuous improvement and the goal of supporting even more students to success, NSHE joined the Charles A. Dana Center's Launch Years Initiative in September 2023.

In cooperation with leadership on each of the NSHE campuses, a Nevada Launch Years Initiative Task Force (hereafter, "Task Force") was created, comprising math faculty members from each institution who actively teach gateway courses (quantitative reasoning, algebra and precalculus), a representative from the Nevada Department of Education (NDE), and state leads from system administration. After a kickoff meeting in December 2023, the Task Force collaborated over the ensuing 16 months to first set a charge to guide its work and ultimately produce the recommendations included in this report. The Task Force also disseminated a survey to academic departments at all NSHE institutions to determine the math topics that are most relevant to students in their disciplines.

The Task Force is unanimous in stating that, in order for this effort to be meaningful and have greater impact, there is much work and collaboration that still need to take place across the state.

Task Force Members

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Recommendation #1: Mindset

Recommendation

Encourage a mindset shift to think of math as having universal applications and being for everyone.

Rationale

There is a critical need to reshape how Nevadans think about mathematics and the importance of math to all academic and career pathways. Shifting mindsets involves promoting the idea that mathematics should be a "productive, enjoyable, and collaborative struggle" that encourages students to learn about process since there can be more than one way to solve a problem. Excitement about math, and the role that it plays in one's life, is crucial to ensuring student success.

Action Plan

- A key component of changing the mindset around mathematics is how academic advisors introduce the conversation with their students. Professional development for advisors, including connecting with the math faculty at their institutions, will provide the proper framing for conversations with students.
- A series of short videos of faculty, academic leaders at the institutions, and state celebrities addressing the importance of mathematics for students should be filmed and posted to institutional and systemwide social media accounts.
- To encourage the mindset of math being for everyone, a greater collaboration between NSHE and the K–12 system must occur to cultivate positive thinking about mathematics. A series of meetings to discuss opportunities for professional development and to get a better understanding of how to change math perception should be scheduled.

Benefits

- Greater institutional cross-collaboration will enable mathematics faculty to engage in cross-institutional discussions with other academic departments about the importance of mathematics and the quantitative and analytical skills it helps students refine.
- By thinking about math as being accessible to everyone and that it is important to everyone's future, students will see their math course as less daunting and will be more likely to complete the course successfully in the required time frame.

Recommendation #2: Statistics/Data Science Pathway

Recommendation

Launch a statewide Statistics/Data Science pathway.

Rationale

Survey results collected across a wide range of academic disciplines in Nevada and nationally clearly support the need for a dedicated statistics/data science pathway. The pathway would serve students whose academic goals do not align with the traditional STEM pathway. Students enrolled in the pathway would gain confidence in analyzing data and interpreting results to make data-informed decisions about policy and practices.

Action Plan

- A statewide working group of math faculty will be convened to re-examine and refine learning outcomes based on the statistics pathway implemented at similar institutions.
- To ensure relevance of the statistics pathway, working group members will communicate with disciplines at their institutions for which statistics is a requirement (or may become a requirement).
- The working group will review current STAT 152 curriculum and make changes, as needed, to meet cross-disciplinary requirements or to determine whether a new course is more appropriate.
- The resulting STAT course will be cross listed with a corresponding MATH course, using a corequisite support course (e.g., MATH 52).
- In order for the resulting STAT/MATH course to qualify as a gateway course, it is necessary to remove MATH120/124/126 as a prerequisite.

Benefits

- STAT/MATH 152 material will be more relevant to a variety of academic disciplines.
- A corequisite component could save students and institutions time and money.
- Student confidence, enjoyment, and retention rates will improve.
- Students with an AP Statistics score of 3 or higher can earn credit in their required gateway math course.
- This course will provide an additional opportunity for dual enrollment offerings.

Recommendation #3: Standardized Math Placement

Recommendation

Develop a systemwide standardization for gateway math placement.

Rationale

Currently, each institution uses its own policies for math placement. If students do not have qualifying ACT or SAT scores as outlined in Board of Regents' policy, each school uses an alternative placement, which may include ALEKS PPL, Accuplacer, or self-guided placement. This inconsistency can lead to confusion for transferring students. Since NSHE institutions are required to use common course numbering, they should also have common placement procedures.

Multiple Measures is approved for use in the Nevada System of Higher Education. It is recommended that the multiple, disjunctive measures approach be supported and scaled across the system.

Action Plan

- System administration, with the help of mathematics faculty and academic leadership at each institution, will form a statewide task force to determine which combination of measures would be most beneficial for accurate student placement. At a minimum, the task force will consider the following:
    - Information from similar state systems that use multiple measures placement to see the different models being used.
    - Current research on multiple measures placement to see which models are better predictors of student success in mathematics.
    - NSHE institutional data on each measure utilized as well as student success rates.
    - Development of a statewide ALEKS (or similar placement process) in which students take one placement test that is used and honored at all institutions.
- A presentation of the task force's recommendations will be provided to the Board of Regents.

Benefits

- Standardized placement will create more consistent messaging to students, families, and academic advisors.
- If a student "places" into a course at one institution, that placement will carry over to the other institutions.

Recommendation #4: STEM Pathway

Recommendation

Refine and strengthen the STEM pathway.

Rationale

Enhancing and refining a STEM pathway requires a strategic approach to meet the evolving needs of students, industry, and academia. The STEM pathway serves as a foundation for academic disciplines such as Biology, Chemistry, and Engineering. A strong foundation in math and science is critical for success in STEM disciplines. STEM fields increasingly require collaboration across disciplines, and a diverse STEM workforce drives innovation while also reflecting the larger population. For the STEM pathway, enhancement includes:

- Ensuring the pathway prepares students for current and future careers by incorporating relevant skills and knowledge.
- Providing practical experiences, which enhance understanding and prepare students for real-world challenges.
- Utilizing technology to enhance engagement and learning outcomes.
- Building support systems to help students overcome challenges and persist.

Action Plan

- Establish a more structured advising process to guide students into their math courses. In other words, properly advise students who do not need this STEM pathway towards success in other pathways. Additionally, clearly disclose the potential impact of changing majors on their math requirements.
- Consider implementing lower enrollment caps to ensure manageable class sizes and effective instruction.
- Revise and enhance the curriculum, integrating statistical content to make it more relevant.
- Incorporate supplemental instruction, such as math aides and tutoring support, to improve student success.
- Emphasize active learning strategies and leverage technology to facilitate engagement and comprehension.
- Use real-world examples that significantly improve practical understanding by making abstract concepts more appealing, relatable, and easier to grasp.
- Encourage students to develop decision analysis skills, do some practice manual calculations, and understand that mathematical concepts can be effectively communicated using words, not just numbers and equations.

Benefits

- Courses will be more productive, engaging, and efficient.
- Decision analysis techniques through the incorporation of real-world examples will improve practical understanding and relevance to the courses.
- More emphasis on thinking about career paths and the role of mathematics—which varies but is essential for all disciplines—will result in an increased understanding by students of what to study in high school and college.
- STEM pathways will be more relevant to students enrolled in them.
- Faculty will have more time to focus on delivering relevant, challenging, and high-quality content.

Appendix: The Path to Gateway Math and English Reform in Nevada

Nevada System of Higher Education (NSHE) engaged in gateway math and English gateway course reform dating back at least to 2010. To provide context for current reform efforts, the following narrative is excerpted from NSHE's report *Corequisite Implementation and Early Results in Nevada*.

2010 – 2018: A Focus on Remedial Reform

Reducing barriers to student success has long been a goal for NSHE and beginning in 2010 the system's focus shifted to remedial education reform when Chancellor Daniel Klaich established the Remedial Transformation Project with two steering committees, one for English and one for mathematics. By November 2012 the Task Force published a report and the Board approved policy recommendations, including provisions for standardized placement scores and authorization for multiple measures. In addition, all institutions began working on course redesign, including shortening remedial pathways and early efforts at a corequisite approach. This work was followed by a Gateway Course Success Summit in April 2014 to continue the discussion of improving student success in mathematics and a second summit in November 2014 to focus on student success in English. In 2015 work continued on mathematics with the establishment by Chancellor Klaich of the Task Force on Gateway Math Success and an ensuing report and policy revision requiring institutions to develop an assessment and placement policy that ensured students who did not meet the benchmarks for placement into a gateway math or English course had an opportunity to enroll in and complete the gateway course within one academic year. Throughout this period, NSHE institutions monitored and adjusted their practices, and pilots for new approaches were undertaken.

2019: The Path to a Statewide Corequisite Policy

In Spring 2019 NSHE saw two important developments that resulted in action by the Board of Regents later that year. First, in January 2019, the Board convened a day and a half long special meeting with a portion focused on Student Success, informally referred to as a Student Success Summit. This meeting was initiated by NSHE Chancellor Thom Reilly, who asked Vice Chancellor for Academic and Student Affairs Crystal Abba to help build an agenda which would not only present institutional initiatives, student success metrics, and goals but would also familiarize Regents with successful efforts to improve student graduation and persistence rates at various institutions across the nation. In turn, Vice Chancellor Abba turned to Dr. Bruce Vandal, Senior Vice President from Complete College America (CCA). Dr. Vandal presented a national perspective on efforts to improve student success, and was followed by Dr. Sunem Beaton-Garcia, President of Broward College, Dr. Timothy Renick, Senior Vice President for Student Success, Georgia State University, and José Cabrales, Senior Director of Student Success Programs & Operations, American Association of State Colleges and Universities. The Student Success Summit portion of the meeting ended with the adoption of institutional student success goals.

Subsequently, in February 2019, NSHE System Administration published a policy paper titled *Traditional Remediation is not Working: Impetus for Comprehensive Change in NSHE Policy*. The findings of NSHE's report mirrored other research in other states and at the national level, such as CCA's landmark report *Remediation: Higher Education's Bridge to Nowhere*. Examining a Fall 2016 Gateway Cohort, the NSHE report indicated specifically:

- 67 percent of students at NSHE's two-year institutions placed into remedial math
- 27 percent of students at NSHE's four-year institutions placed into remedial math
- Students from historically minoritized backgrounds were overrepresented in remedial education, including extreme equity gaps among Hispanic and Black students

In addition, the report examined 150 percent graduation rates for three cohorts of NSHE community college students (2013, 2014 and 2015) and noted that students who did not take a math course in their first year of enrollment were substantially less likely to graduate within 150 percent of time, with rates ranging from 1.0 percent to 3.6 percent.

This report was presented to the Board of Regents at its February quarterly meeting, and Chancellor Reilly utilized the findings to facilitate further discussion on corequisite support with regents and institutional presidents. Coming out of this meeting, Chancellor Reilly and Vice Chancellor Abba received support from the Board of Regents to return with a corequisite policy proposal at the next quarterly meeting. This led to the Board of Regents' June 2019 approval of the *NSHE Corequisite and College-Ready Gateway Policy*, which was a significant step in advancing student success.

NSHE Corequisite and College-Ready Gateway Policy

With a required implementation date of Fall 2021, the *NSHE Corequisite and College-Ready Gateway Policy* contains several provisions which prompted sweeping changes across all seven public higher education institutions in Nevada. The policy applies equally to the four community colleges, state university, and two R1 research universities that make up NSHE.

- Within the first two regular academic semesters following initial enrollment, all degree-seeking students are required to be placed into the college-level gateway course, either with or without just- in-time support via corequisite instruction.
- Combined, the college-level and corequisite courses cannot total more than six credits.
- Traditional forms of remediation are no longer allowed, except for college preparatory courses offered to high school students (not including the summer prior to matriculation).
- Placement directly in math and English gateway courses (without corequisite support), for both recent high school graduates and returning adult students, was clarified, with explicit provisions for multiple measures.
- Institutions are authorized to place students with documented disabilities in

alternative pathways upon the written recommendation of the disability resource center.

- Institutions may request a temporary exemption from corequisite enrollment for the purpose of experimental programs.
- Periodically, the Chancellor's office will audit institutions for compliance with these provisions and will report such findings to the Board.

All of these provisions are in place today and have remained unchanged from the original policy proposal, with one exception. The June 2019 policy proposal required all degree seeking students to be enrolled in a college-level gateway math and English course, with or without corequisite remediation, upon initial enrollment. In September 2020 the Board approved a policy revision that instead required gateway math and English course enrollment within the first two regular semesters following initial enrollment. This revision was a response to faculty and administrator concerns on two fronts: 1) taking both a corequisite math and a corequisite English course in a single semester would not be possible for most part-time students, and 2) frontloading all gateway courses in the fall presents substantial scheduling and staffing challenges.

Due to the hard work and dedication of numerous English and math faculty, advisors, and administrators at each of the institutions, NSHE achieved systemwide, full-scale corequisite implementation in Fall 2021, despite additional challenges presented by the COVID-19 pandemic. From the outset, data has reflected substantial improvements in both math and English course completion rates. For an analysis of early outcomes data, as well as a more detailed description of the timeline and task force activities, see Corequisite Implementation and Early Results in Nevada. For current data, see NSHE's Gateway Course Enrollment and Completions dashboard.

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