Corequisite Policy Forum
Materials Available Online

- Go to nshe.nevada.edu
- Click “Corequisite Policy Forums April 2019”
- These following materials are available:
  - Corequisite Policy Forum Agenda
  - Policy Proposal
  - Corequisite Policy Forum Presentation
  - Remedial Education – Policy Paper
“Gateway Course Success Policy” adopted in 2015

All new, degree seeking students must be placed on a pathway to complete their gateway math and English courses within the first year of enrollment. Students must be continuously enrolled in the subject until completion of their gateway course. Exceptions include:

- Students with remediation needs deemed “less than high school” level
- Students on a STEM pathway are allowed three semesters to complete the gateway course

Guaranteed College-Level Placement for:

- Continuous enrollment in English and mathematics during high school AND enrolls in an NSHE institution in any term during the academic year following high school graduation
- ACT 18 English and/or ACT 22 Math (the ACT Guarantee)
History

- **November 2012** Remedial Transformation Project Report
- **April 2015 Report** from the Task Force on Gateway Mathematics Success
- **January 2019 Board Presentation** from Bruce Vandal, Complete College America Senior Vice President
  - Tennessee Board of Regents: *Co-requisite Remediation Full Implementation 2015-16*
- **March 2019 Board Presentation** from Theo Meek, NSHE Research Scholar
- NSHE Policy Paper: *Traditional Remediation is Not Working*
A Nationwide Concern Brought Home

- Nationally...
  - Placement rates are high
    - 68% of community college students
    - 40% of public, four-year students
  - Too many ethnic minorities are enrolled
    - 56% of Black students enroll in remediation
    - 45% of Hispanic students enroll into remediation
  - Degree completion rates are low
    - Less than 10% of students who place into remediation will graduate

- Within NSHE...
  - Placement rates are comparable
    - 67% of community college students
    - 27% of state & university students
  - Too many ethnic minorities are enrolled
    - 56% of Black students enroll in remediation
    - 45% of Hispanic students enroll into remediation
  - Degree completion rates are lower
    - 8% of students who place into remediation will graduate

Source: National Center for Education Statistics (2016)
Source: NSHE Student Data Warehouse, Fall 2015 and 2016 Gateway Cohort
Mass Placement into Remediation

Math Placement (Fall 2016 Gateway Cohort)

<table>
<thead>
<tr>
<th></th>
<th>College-Level</th>
<th>Remediation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSN</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>GBC</td>
<td>19%</td>
<td>81%</td>
</tr>
<tr>
<td>TMCC</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>WNC</td>
<td>27%</td>
<td>73%</td>
</tr>
<tr>
<td>2-Year Total</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>NSC</td>
<td>22%</td>
<td>78%</td>
</tr>
<tr>
<td>UNLV</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>UNR</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>4-Year Total</td>
<td>73%</td>
<td>27%</td>
</tr>
</tbody>
</table>

2-Year Institutions

4-Year Institutions

Source: NSHE Student Data Warehouse, Fall 2016 Gateway Cohort
First Math Enrollment

First Math Enrollment (Fall 2016 Gateway Cohort)

<table>
<thead>
<tr>
<th></th>
<th>No Math First Year</th>
<th>College-level</th>
<th>MATH 95-98</th>
<th>&lt; MATH 95</th>
<th>4-Year Total</th>
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</thead>
<tbody>
<tr>
<td>CSN</td>
<td>29%</td>
<td>63%</td>
<td>2%</td>
<td>1%</td>
<td>30%</td>
</tr>
<tr>
<td>GBC</td>
<td>16%</td>
<td>64%</td>
<td>1%</td>
<td>4%</td>
<td>30%</td>
</tr>
<tr>
<td>TMCC</td>
<td>20%</td>
<td>30%</td>
<td>2%</td>
<td>7%</td>
<td>22%</td>
</tr>
<tr>
<td>WNC</td>
<td>2%</td>
<td>42%</td>
<td>2%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>2-Year Total</td>
<td>28%</td>
<td>46%</td>
<td>30%</td>
<td>31%</td>
<td>89%</td>
</tr>
<tr>
<td>NSC</td>
<td>40%</td>
<td>2%</td>
<td>9%</td>
<td>7%</td>
<td>71%</td>
</tr>
<tr>
<td>UNLV</td>
<td>8%</td>
<td>71%</td>
<td>22%</td>
<td>1%</td>
<td>75%</td>
</tr>
<tr>
<td>UNR</td>
<td>7%</td>
<td>75%</td>
<td>24%</td>
<td>1%</td>
<td>66%</td>
</tr>
<tr>
<td>4-Year Total</td>
<td>4%</td>
<td>66%</td>
<td>30%</td>
<td>1%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: NSHE Student Data Warehouse, Fall 2016 Gateway Cohort
# Remediation Hinders Degree Completion

## Source: NSHE Student Data Warehouse, Fall 2014-15 Gateway Cohorts

### CSN

<table>
<thead>
<tr>
<th></th>
<th>2014 Cohort</th>
<th></th>
<th>2015 Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enrolled</td>
<td>Degree Completion</td>
<td>Enrolled</td>
</tr>
<tr>
<td></td>
<td>#</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Less than MATH 95</td>
<td>356</td>
<td>45</td>
<td>12.6%</td>
</tr>
<tr>
<td>MATH 95-98</td>
<td>646</td>
<td>92</td>
<td>14.2%</td>
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<tr>
<td>College-Level</td>
<td>775</td>
<td>156</td>
<td>20.1%</td>
</tr>
<tr>
<td>No Math First Year</td>
<td>2,415</td>
<td>32</td>
<td>1.3%</td>
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### GBC

<table>
<thead>
<tr>
<th></th>
<th>2014 Cohort</th>
<th></th>
<th>2015 Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enrolled</td>
<td>Degree Completion</td>
<td>Enrolled</td>
</tr>
<tr>
<td></td>
<td>#</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Less than MATH 95</td>
<td>80</td>
<td>14</td>
<td>17.5%</td>
</tr>
<tr>
<td>MATH 95-98</td>
<td>48</td>
<td>14</td>
<td>29.2%</td>
</tr>
<tr>
<td>College-Level</td>
<td>41</td>
<td>25</td>
<td>61.0%</td>
</tr>
<tr>
<td>No Math First Year</td>
<td>55</td>
<td>0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

### TMCC

<table>
<thead>
<tr>
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<th>2014 Cohort</th>
<th></th>
<th>2015 Cohort</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Enrolled</td>
<td>Degree Completion</td>
<td>Enrolled</td>
</tr>
<tr>
<td></td>
<td>#</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Less than MATH 95</td>
<td>245</td>
<td>25</td>
<td>10.2%</td>
</tr>
<tr>
<td>MATH 95-98</td>
<td>381</td>
<td>93</td>
<td>24.4%</td>
</tr>
<tr>
<td>College-Level</td>
<td>193</td>
<td>73</td>
<td>37.8%</td>
</tr>
<tr>
<td>No Math First Year</td>
<td>398</td>
<td>5</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

### WNC

<table>
<thead>
<tr>
<th></th>
<th>2014 Cohort</th>
<th></th>
<th>2015 Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enrolled</td>
<td>Degree Completion</td>
<td>Enrolled</td>
</tr>
<tr>
<td></td>
<td>#</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Less than MATH 95</td>
<td>14</td>
<td>3</td>
<td>21.4%</td>
</tr>
<tr>
<td>MATH 95-98</td>
<td>303</td>
<td>50</td>
<td>16.5%</td>
</tr>
<tr>
<td>College-Level</td>
<td>236</td>
<td>82</td>
<td>34.7%</td>
</tr>
<tr>
<td>No Math First Year</td>
<td>140</td>
<td>1</td>
<td>0.7%</td>
</tr>
</tbody>
</table>
Overrepresentation of Minority Populations

National Data
Percent of Subgroups Enrolled in Remediation (2014 CCA Cohort)

NSHE Data
Percent of Minority Subgroups Enrolled in Remediation (2016 Gateway Cohort)

Source: Complete College America, “Corequisite Remediation: Spanning the Completion Divide”

Source: NSHE Student Data Warehouse, Fall 2016 Gateway Cohort
Traditional versus Corequisite Remediation and Gateway Course Completion

- **≤13**: 3% (Pre-Requisite Model) vs. 33% (Co-Requisite Model)
- **14**: 4% (Pre-Requisite Model) vs. 46% (Co-Requisite Model)
- **15**: 7% (Pre-Requisite Model) vs. 55% (Co-Requisite Model)
- **16**: 12% (Pre-Requisite Model) vs. 63% (Co-Requisite Model)
- **17**: 20% (Pre-Requisite Model) vs. 70% (Co-Requisite Model)
- **18**: 26% (Pre-Requisite Model) vs. 80% (Co-Requisite Model)
- **No ACT**: 13% (Pre-Requisite Model) vs. 49% (Co-Requisite Model)
- **Overall**: 12% (Pre-Requisite Model) vs. 55% (Co-Requisite Model)

Source: Tennessee Board of Regents, Denley 2016
Adult Learners are No Exception

Traditional versus Corequisite Remediation and Gateway Course Completion

Source: Tennessee Board of Regents, Denley 2016
Underprepared or Under Placed?: English

Traditional versus Corequisite Remediation and Gateway Course Completion

<table>
<thead>
<tr>
<th>ACT Score</th>
<th>Pre-Requisite Model (2012-13)</th>
<th>Co-Requisite Model (2015-16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>22%</td>
<td>73%</td>
</tr>
<tr>
<td>13</td>
<td>25%</td>
<td>54%</td>
</tr>
<tr>
<td>14</td>
<td>28%</td>
<td>63%</td>
</tr>
<tr>
<td>15</td>
<td>33%</td>
<td>68%</td>
</tr>
<tr>
<td>16</td>
<td>37%</td>
<td>70%</td>
</tr>
<tr>
<td>17</td>
<td>38%</td>
<td>69%</td>
</tr>
<tr>
<td>No ACT</td>
<td>25%</td>
<td>67%</td>
</tr>
<tr>
<td>Overall</td>
<td>31%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Source: Tennessee Board of Regents, Denley 2016
Institutions requiring high stakes placement exams have no guarantee of progression even if remedial courses are successfully completed.
Corequisite Remediation Models

Corequisite Remediation at UNR

- MATH 126E: Pre-Calculus Expanded (5 credits)
  - MATH 96D (2 credits) +
  - MATH 126E (3 credits)

- MATH 120E: College Mathematics Expanded (4 credits)
  - MATH 96A (1 credits) +
  - MATH 120E (3 credits)
Possible Pathways

College-level

STEM
- MATH 126

Liberal Arts
- MATH 120

Business/Health
- MATH 124 or MATH 126

Trade/Technical
- Technical Math or Embedded Curriculum
Possible Pathways

High School-level

- STEM
  - MATH 126E or MATH 126
- Liberal Arts
  - MATH 120E
- Business/Health
  - MATH 124X
- Trade/Technical
  - Technical Math or Embedded Curriculum
Possible Pathways

Less than High School

STEM
- MATH 124X
- MATH 126E or MATH 126

Liberal Arts
- MATH 120E

Business/Health
- MATH 124X

Trade/Technical
- Technical Math or Embedded Curriculum
Possible Pathways

- MATH 120
  - Public Safety, Education, Social Behavioral Sciences, Human Services, Arts, Humanities, Communication, and Design
- MATH 124
  - Business, Health Sciences
- MATH 126
  - Science, Technology, Engineering, and Math
- Trade Math
  - Industry, Manufacturing, Construction, Etc.
Some Systems that are on board
Supports the success of corequisite remediation
- Improving mathematical learning at all levels will require a fundamental shift

The use of corequisite courses demonstrates substantial improvements in initial math courses and subsequent courses

Grounded in research, Common Core State Standards for Mathematics, and the MAA Instructional Practices Guide

“We owe it to our discipline, to ourselves, and to society to disseminate mathematical knowledge in ways that increase individuals’ access to the opportunities that come with mathematical understanding.”

-Instructional Practical Guide, Mathematics Association of America
English Corequisite Remediation

- Texas Corequisite Study, Fall 2016 to Fall 2018
  - Randomized control trial of Corequisite Implementation at 5 colleges placed more minority students in corequisite courses with promising qualitative data

- Colorado Community College System
  - Corequisite Model in 2014-15: 95% of students passed college-level English
  - Prerequisite Model in Previous Years: 34% passed college-level English

“Accelerated pathways, including corequisite classes, benefit students from all racial and ethnic groups, all placement and income levels”

-Katie Hern, English Instructor and co-founder of the California Acceleration Project
Traditional remediation is not working
- Too many start in remediation and are unsuccessful in completing their gateway course
- Psychological challenges and long pathways to gateway course completion
- Closing the achievement gap starts with reinventing remediation

Corequisite remediation results in much higher student success outcomes
- Placing students in a college-level course where academic support is provided just-in-time as students need it better facilitates long term student success
- Success at UNR and NSC as well as nationwide support corequisite remediation

Regardless of academic preparation, success levels are higher for students in corequisite remediation
- Even students at the lowest level of academic preparedness perform better in corequisite models
The Proposed Policy: Subsections 1 and 2

- Subsection 1: Ability-to-benefit test for federal student aid
  - No changes

- Subsection 2: Initial Placement
  a) Continuous Enrollment
    - Continuous Enrollment in gateway mathematics and English is maintained
    - Required enrollment in gateway mathematics and English courses (including embedded curriculum or alternative math courses (BUS, CUL, STAT, APST, etc.))

  b) Remediation Exceptions
    - Effective Fall 2021, remedial courses (numbered below 100) shall not be offered independently with the exception of:
      - Remedial courses offered to high school students in the form of college preparatory courses
      - Remedial courses offered as mandatory corequisite courses, simultaneously taught with a college-level gateway mathematics or English course
Implications on Embedded Curriculum

- Students enroll in gateway mathematics and English courses *as required by their degree program*

- Embedded curriculum is gateway completion
  - Courses with math foundations
    - COT, CUL, BUS, PSY, SOC, STAT
  - Programs that fulfill gateway math over multiple courses
    - Welding, etc.
Subsection 2 (continued):

c) College-Ready Placement

- Meeting any of the College Readiness Benchmarks prohibits placement into corequisite remediation (Benchmarks are unchanged)
- Institutions may use high school transcripts and GPA to determine placement (unchanged)
- Institutions may use alternative mechanisms for higher placement if the college readiness assessment was not taken within the past three years (e.g. old ACT or SAT scores)
Subsection 2 (continued):

d) Placement for Students who do not meet College-Readiness Benchmarks

- Degree and certificate seeking students shall be placed in a corequisite course whereby:
  - The total corequisite course does not exceed six units
  - Academic support, whether through credit or non-credit options, is provided just-in-time
  - Students are not required to complete a placement test for enrollment in subsequent courses (e.g. ACCUPLACER as a final exam)

- No standalone remediation can be offered to students, regardless of their level of academic under-preparedness (except for high school students)
  - Loopholes for placement below high school level and STEM students are closed
Subsection 3: Publication Requirement

- Institutions must post criteria and placement information on their website (unchanged)

Subsection 4: Definitions

- College-level: 100 and above
- Co-requisite: college-level gateway course numbered 100-level and above where academic support is provided simultaneously in the same semester.
- Remedial course: below college-level, numbered below 100

Subsection 5: Reporting

- Chancellor’s Office will audit course taxonomy files
Students with documented disabilities may be placed on alternative pathways.

Written recommendation from the disability resource center is required.

E.g. MATH 19 and MATH 119.
Select Additional Reading Material

➤ Reports

- Multiple Education Agencies: *Core Principles for Transforming Remediation, A Joint Statement*
- Brookings: *Evidence-based reforms in college remediation are gaining steam*
- Community College Research Center: *Do High-Stakes Placement Exams Predict College Success?*
- Complete College America: *Remediation: Higher Education’s Bridge to Nowhere*
- Complete College America: *Corequisite Remediation: Spanning the Completion Divide*
- Complete College America: *Scaling Corequisite Academic Support*
- RAND Corporation: *Designing and Implementing Corequisite Models of Developmental Education*
- Tennessee Board of Regents: *Co-requisite Remediation Full Implementation 2015-16*

➤ Articles

- California Acceleration Project: *Leading the Way: Cuyamaca College Transforms Math Remediation*
- The Chronicle of Higher Education: *Co-Requisite Math Doesn’t Result in Weak Foundational Knowledge*
- The Chronicle of Higher Education: *Evidence Clearly Favors Corequisite Remediation*
- The Chronicle of Higher Education: *The End of the Remedial Course*
- Complete College America: *Corequisite Support Case Study: Colorado Community College System*
- Inside Higher Ed: *The Extensive Evidence of Co-Requisite Remediation’s Effectiveness*
- Los Angeles Times: *Cal State remedial education reforms help thousands more students pass college-level math classes*
Corequisite Implementation Webinar

Heidi Loshbaugh
Dean, Center for Math and Science
Community College of Denver

Friday, April 26 at 10am

Details will be sent via e-mail
Roundtable Discussion
Questions