Corequisites that Support Partner Disciplines

Chris Oehrlein
Oklahoma City Community College

coehrlein@occc.edu
QUESTIONS

1) (Poll) After taking their gateway math course, are your students prepared for any following courses with significant computational or symbolic components? (Yes/No/Haven’t Thought about It)

2) (Chat) What one skill/topic/objective has been lost in the transition from developmental sequences to co-requisites that could help students beyond their gateway math courses?
“However, we did not find any significant effects of corequisite remediation on enrollment persistence, transfer to four-year colleges, or degree completion up to three years after initial enrollment. This suggests that improvements in gateway course outcomes are important but insufficient barometers of academic momentum and college success.”

_The Effect of Corequisite Remediation: Evidence from a Statewide Reform in Tennessee_

♫ **KEY QUESTION:** What can we do in our gateway courses and their corequisite supports to contribute to improving persistence and degree completion?
ANSWERS

• More deliberate use of math pathways
• Deliberate infusion of study/life skills into the gateway courses and corequisite supports

❖ Content that is needed in courses and programs beyond the gateway math course
Charts and Tables

• For everyone - do not leave out science/engineering

• Explore as Models before “solving” or “calculating”
  ▪ Notice?
  ▪ Wonder?
  ▪ Patterns?

• Units of Measurement (What? Why? Conversions?)

• Ratios, Percentages, Percent Change/Difference
Fraction, Decimal, Percent, Rate

• Every Student!
• Units of Measurement
• Guided Questions through Procedure
• When is it ok to get an answer of over 100%? (Poor Intuition)
• Percent Increase/Decrease vs. Percent Difference
• Rates
  ▪ Convert Units
  ▪ Proportional Reasoning (geometric/exponential change)
DECIMALS

• Rules of Exponents

• Scientific Notation
  ▪ Deliberate questions: allow students to explore notation
  ▪ Combining: moving decimal (How? Why?)

• Significant Figures:
  ▪ number of digits to use if reporting in scientific notation
  ▪ connect to Rounding to Nearest ...
ALGEBRA

• More than $x$ and $y$
• Units of Measurement
• Rate of change
  ▪ change in input per unit output
  ▪ deliberate communication questions: graphs and processes
• (Multivariable) Formulas (including systems)
  ▪ Time to Explore
  ▪ EXAMPLE: Solve for $a$ (acceleration of masses on a pulley).
    \[
    F - T = m_1a
    \]
    \[
    T = m_2a
    \]
Corequisite Design

Be deliberate in identifying and developing activities:

• Just-in-Time Skills for Gateway Math

• Needed Skills for Future Courses
  ▪ Communication with Partner Disciplines
  ▪ In Coreq or Gateway Course ??

• What topics/objectives need to go?

• Instructor-Specific? (Who facilitates corequisite?)
Corequisite Support is NOT ONLY

• Just-in-Time Tutoring
• Condensed/Faster-Paced Developmental Mathematics
• Skills Practice

Corequisite Support is not for every student. What percentage at open admissions colleges need more? What does that look like? How does it work with pathways?
THANK YOU!

coehrlein@occc.edu