

## Math Pathways - Possible Solutions (revised May 18, 2015)

### 1. Increase success rates in college mathematics courses that lead to graduation

- a. A recommendation for improved first-year advising to ensure:
  - i. Appropriate choice of gateway courses with a sensitivity to overplacement in college algebra (M121)
  - ii. Require that students needing developmental courses take them during their first semester in college (done in new BOR policy 301.18), then take their gateway immediately following that
- b. Recommend that a broader range of pathways be available for students at the 2-year colleges
- c. Consider alternatives that have shown promise for success in gateways courses, including:
  - i. Create a one-semester, developmental course for non-STEM pathways (for example, the M088 → Quantitative Literacy model)
  - ii. Create M106 a universal non-STEM, terminal course to satisfy general education requirements
  - iii. Provide supplemental instruction, for example EdReady, and academic tutoring for college level courses
  - iv. Create co-requisite courses for gateway courses
  - v. Provide timely and required tutoring opportunities
  - vi. Institute local prerequisite screening for gateway courses
- d. Recommend that OCHE appoint a council with mathematics faculty, advisors, and administrators to extend the work of the Math Pathways Task Force

### 2. Improve the articulation between mathematics requirements and other academic programs

- a. Mathematics departments should meet periodically with major/program departments to assess the mathematics competencies required for the degrees they offer
- b. Redesign courses to provide the appropriate content material for all programs; for example an MUS-wide communication about the mathematics skills required for nursing students
- c. Consider additional learning outcomes for ALL courses in common course numbering database
  - i. Re-establish Faculty Learning Outcome Councils (FLOCS) to be sure the listed outcomes are up to date
  - ii. Broaden the discussion to include advisors, administrators, and faculty about learning outcomes

### 3. Use data to support the system recommendations (placement and student support)

- a. Reevaluate respective placement policies for MUS
  - i. Consider “cut ranges” rather than “cut scores” to determine placement
  - ii. Track student success and completion based on initial math placement on a regular basis at the unit and system levels
  - iii. Consider other initial placement factors: class rank, time since last math course
- b. Investigate the interaction between placement and gateway success for all pathways (e.g., are success in General Education courses and Prestatistics courses predicted accurately?)
- c. The appointed OCHE council will regularly review data and recommend action

### 4. Stronger communication between secondary schools and college

- a. Ensure that high school juniors understand their placement measures (ACT, SAT, Smarter Balance, etc.) before it's too late, they must be able to take the right courses when they are seniors – college-bound students must take mathematics in their senior year
- b. Create a task force composed of secondary and post-secondary individuals to raise the discussion of issues such as college preparation, dual credit, program requirements, etc.