Academic Momentum in the MUS: Math Pathways & Placement

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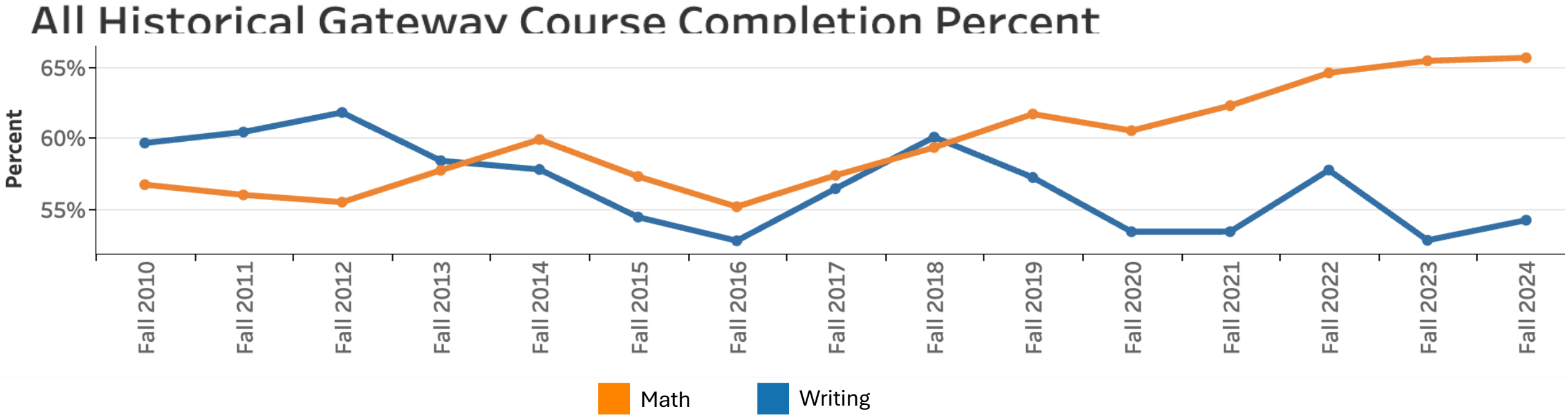
Why Gateway Math and Writing Matters

Student who pass gateway math in first 2 years are nearly **3 times as likely to ever graduate**. Students who pass gateway writing in 2 years are **twice as likely to ever graduate.**



Source: MUS Data Warehouse; "MUS First Time Freshman Gateway Course Success"; gateway pass rates within first year of enrollment; https://mus.edu/data/dashboards/first-time-freshmen.html

MUS Strategies for Math & Writing Success

Gateway Course Completion Performance Funding Metric

Incentives campuses to focus on gateway course completion as a central student success metric and links funding to outcomes

Transition from Pre-Requisite to Co-Requisite Model

Drastically reduce pre-requisite model (below 100-level, at cost but not credit-bearing) and increase co-requisite (college-level) to reduce credits and cost to gateway course completion

Evidence-Based Placement Policy & Review Process

Build evidence-based policy to sustain and strengthen outcomes-oriented best practices at campuses; require multiple measures, reduce placement into pre-reqs, establishes review process for peers (faculty, academic admins, advising staff) to offer recommendations for continuous improvement, and establishes placement reciprocity across MUS.

MUS Math Pathways 1.0 & MUS Math Pathways 2.0

Math pathways 1.0 removed algebra as default and aligned metamajors to relevant gateway math course. Math pathways 2.0 refines for changes in disciplines overtime and enhances credit mobility for transfer and dual enrollment students.

OUR PROCESS

Faculty-Driven, Evidence-Based

1. **Mapped the current state**
   Every degree program audited
2. **Identified misalignment**
   Five meta-major areas surfaced
3. **Surveyed discipline faculty**
   What math do students actually need?
4. **Subgroup analysis**
   2-yr and 4-yr representation
5. **Returned to discipline faculty**
   Drafts refined through direct dialogue
6. **CAO engagement throughout**
   Campus feedback incorporated

414 **four-year programs**
audited & catalogued

296 **two-year programs**
audited & catalogued

53 **discipline faculty surveyed**
across 5 meta-major areas

Top transfer programs (5-yr, MUS): *Liberal Arts 2,164 • Nursing 1,544 • Business 816 • Allied Health 674*

RECOMMENDATIONS

Six Targeted Alignments

Most courses and structures stay exactly where they are.

Meta-Major Area	Current State	Recommended Pathway
Social Sciences	M105, M115, or M121 + STAT 216	STAT 216 only (M105 as prereq if needed)
Nursing	M140, M121, or M115 (inconsistent)	M140 preferred; M121 accepted
Allied Health	Varies by program and campus	M105 or M140 (by certification needs)
Business	5 different courses + STAT 216	New M1XX: Modeling with Functions and Data + STAT 216
Industrial Technology	M111/M114 (no gen-ed); M105 elsewhere	Revamped M111 with gen-ed credit + async online for DE
STAT 216 prerequisite	M115 at 3 campuses; M105 or none elsewhere	M105 as maximum allowable prerequisite system-wide

NEXT STEPS

COMMUNICATION & IMPLEMENTATION

Curriculum Development and Pilot

Develop curriculum and pilot math for business (M115) and math for trades (M111); put courses through campus and faculty approval processes

MUS Communication

Share final recommendations with provosts, faculty, and advising communities to implement including updates to course maps, advising materials, registrar course planning, etc

Dual Enrollment Integration

Integrate into MUS Dual Enrollment Operational Guidance, share with dual enrollment coordinators, etc

K-12 Integration

Collaborate with K-12 partners including OPI, Montana high schools, and board of public education to align K-12 math content standards and MUS math pathways, integrate into high school advising, and identify strategies to increase access to DE gateway math course taking for all MT high schools