

First Year Math Information

Who: All students who take first year math courses, no matter what major Almost every student enrolled at Western Washington University will take at least one of the 15 FYM courses. (MATH 112 -MATH 157)

Facts: MATH 112 Functions and Algebraic Methods and MATH 114 Precalculus I. These two courses have the lowest success rates (59% and 61% for Fall 2011-Summer 2016, respectively) and largest enrollments of the first-year math courses.

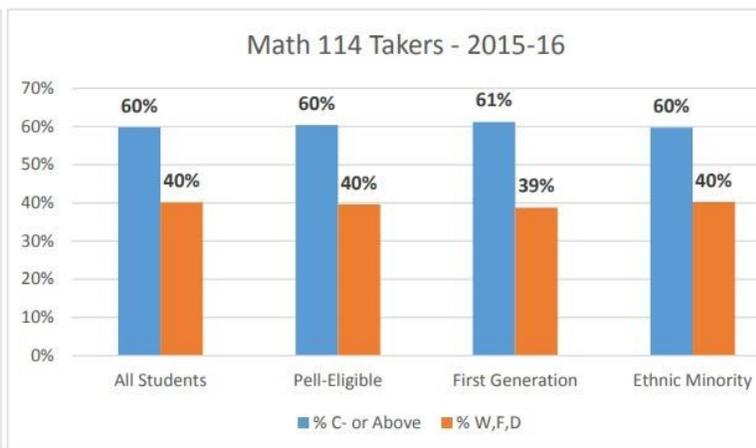
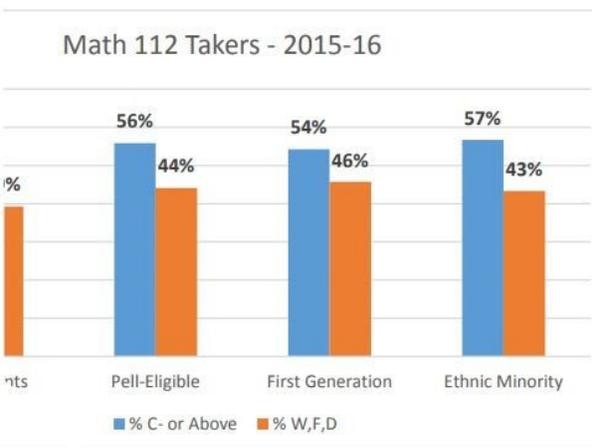
Re-examine courses math 112-115

- In the absence of sequence success rates calculated by tracking of individual students, sequence success rates may be very roughly approximated by using products of individual course success rates.

Graphs: FYM rates for 112 and 114 for 2015 -2016

2015-16	Math 112		
	Total Enrolled	Percent W or F	Percent W, F or D
All Students	1,440	24%	39%
Pell-Eligible	451	24%	39%
First Generation	560	28%	46%
Ethnic Minority	478	28%	43%

2015-16	Math 114		
	Total Enrolled	Percent W or F	Percent W, F or D
All Students	1,261	29%	40%
Pell-Eligible	338	27%	40%
First Generation	446	27%	39%
Ethnic Minority	380	27%	40%



- Compared to all students, students from underrepresented backgrounds (pell-eligible, First Generation, Ethnic Minority) are withdrawing or failing math 112 at higher rates)
- 40% of students taking math 114 fail or withdraw

Introductory mathematics courses are taught by 25 to 30 NTT faculty

- Responsibilities do not extend beyond their quarterly course assignments
- This means that NTT Profs are just teaching their assignment course and their work doesn't go beyond the end of the quarter

Additional funds are necessary on an ongoing basis to support *shared governance* structures and decisions regarding systemic change initiatives in FYM.

- In order to better support students, there needs to be more funding to support the constant work being done to improve first year math courses
- The work of the FYM Budget Proposal will be aligned with the 3 Core Themes of Western's Mission and Vision as well as the Strategic Plan of the College of Science and Engineering

Shared Governance structure

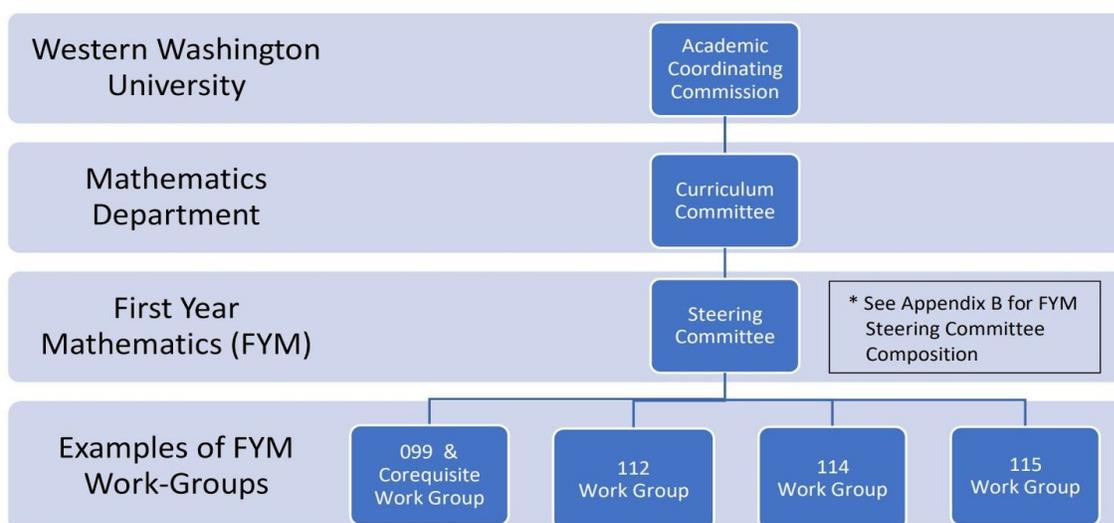


Figure 1: Proposed Structure for Curriculum Changes in First Year Mathematics

Resolution a steering committee, which consists of 2 NTT, 2TT, FYMD, TCD, AAL and CSE senator (For now)

- The FYMSC will discuss research-based recommendations regarding undergraduate mathematics curriculum, assessment, and instruction for first-year mathematics.
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Table 1. *Summary Table of First-Year Mathematics Steering Committee*

Position	Voting or Non-voting	Selection Process	Primary Responsibilities	Length of Following Terms	Length of 1 st Term
Chair -DFYMI	Voting	DFYMI Position-Related Initiative	Teach FTM courses. Schedule meetings and set agendas. Facilitate group discussions. *	Ongoing	N/A
(2) TT & Tenured Faculty	Voting	(1) Appt.'d by Dept. Chair from Exec. Com. (1) Elected	Teach one FYM course during their tenure. *	1-Yr (Appt'd) 2-Yr (Elected)	5 Qtrs (WI21-SP22) 8 Qtrs (WI21-SP23)
(2) NTT Faculty	Voting	(2) Elected	Teach FYM courses. *	Alternating 2-Yr	5 Qtrs (WI21-SP22) 8 Qtrs (WI21-SP23)
(1) Tutoring Center Director	Non-voting	Voluntary	Coordination of support services between FYM & Tutoring Ctr.	Ongoing	N/A
(1) Academic Advising Liaison	Non-voting	Voluntary	Advise FYMSC regarding implications of curricular and policy changes.	Ongoing	N/A
(1) Student Senate Rep.	Non-voting	Nominated by Student Senate	Advise FYMSC regarding student concerns.	1-Yr	N/A

* See change in the first paragraph.

FYM Recommendations vs. What has been accomplished

<p>Recommendation I: Instructors who teach courses should participate fully in the design, assessment, and revision of the courses.</p>	<p>Plan is in the works, but hasn't been funded yet.</p>
<p>Recommendation C: Each first-year course cluster or sequence should have a faculty member coordinate the various sections of the course to offer students a more uniform experience section to section.</p>	<p>Plan is in the works "The first-year math classes must align closely with the curricular goals of the mathematics department, Quantitative and Symbolic Reasoning goals of WWU, and support the curricular goals of non-mathematics courses for which first year math courses serve as a prerequisite"</p>
<p>Recommendation P: Reexamine the pedagogical approach of first-year math courses and consider the inclusion of more active and student-centered learning</p>	<p>Plan is in the works but hasn't been executed "Academic excellence will be enhanced by promoting the enactment of research-based pedagogy, including diversity, equity and inclusion practices such as student-centered learning". " We also will concentrate on examining the mathematical learning experiences and success of historically marginalized students"(FYM Budget Proposal)</p>
<p>Recommendation O: Reexamine the course objectives of MATH 112, MATH 114, MATH 115, and MATH 118 with an eye toward refocusing the courses on a smaller number of key objectives.</p>	<p>No, but it is important we do bc one point showed us "Both MATH 112 and MATH 114/115/118 are tied to text books that were originally published in the mid 1990's and have not been revised for more than a decade."</p>
<p>Recommendation A: Change advising practice so that students who do not express interest in studying fields that require calculus or significant algebra are directed to a QSR path other than 112-114 or 112-156.</p>	<p>In process of being met: On steering committee there will be an Academic Advising liaison to the Math Department</p>
<p>Recommendation S: Reexamine course scheduling including meeting duration and section sizes to facilitate</p>	<p>"Most such techniques are difficult or impossible to implement effectively with classes in excess of 40 students. They</p>

changes in pedagogical approaches developed from Recommendation P.	require one-to-one or one-to-few interaction between the instructor and the students or within student groups.”
Recommendation F: Reconfigure physical classrooms as needed to support Recommendations P and S.	On hold because of covid

Thus, the success of this FYM proposal has the potential to benefit academic programs campus wide