



Montana Common Course Numbering

AY 2021 CCN QUALITY ANALYSIS



Executive Summary

Montana's Common Course Numbering system applies common names and numbers to undergraduate curriculum across Montana's public institutions. This helps to make transfer predictable and seamless for the more than 1500 students each year who transfer between Montana University System Campuses.

This report analyzes the course taking patterns of transfer students enrolling in the 2018-19 and 2019-20 academic years to evaluate whether common course numbering ensures students' credits transfer and are counted while also adequately preparing students for further study.

- Of the 184,609 courses taken by MUS transfer students in 2018 and 2019, 322 (or 0.17%) were students retaking a course they had previously passed.
- Of students retaking a course, 78% were in a gated health professions majors and were likely aiming to improve a course grade so they can proceed in a health professions program with competitive admissions.
- Looking across key course sequences in math, biology, chemistry, writing, and psychology, there is little discernable difference in the performance of transfer students relative to native students in the second course in the sequence.

This analysis indicates that common course numbering is working. Repeated coursework after transfer is exceedingly rare. Where it does occur, it is primarily due to competitive admissions in health professions programs. Finally, transfer students appear to be about equally prepared for further coursework in key course sequences as their peers.

Introduction

This annual MUS common course numbering quality analysis assesses the degree to which commonly numbered courses enable Montana students to carry coursework from one campus to another without penalty. It further examines whether commonly numbered courses adequately prepare students for subsequent coursework. The intent is to ensure that Montana's common numbering system adequately serves transfer students while ensuring rigor and alignment in transfer coursework.

This report has been prepared by the Office of the Commissioner of Higher Education and reviewed by campus common course numbering liaisons to identify any areas requiring further analysis and to develop recommendations. It replicates analyses conducted by the Montana Legislative Audit Division in their 2019 report 18P-01 "Montana University System Coordination of Student Enrollment and Administrative Services".

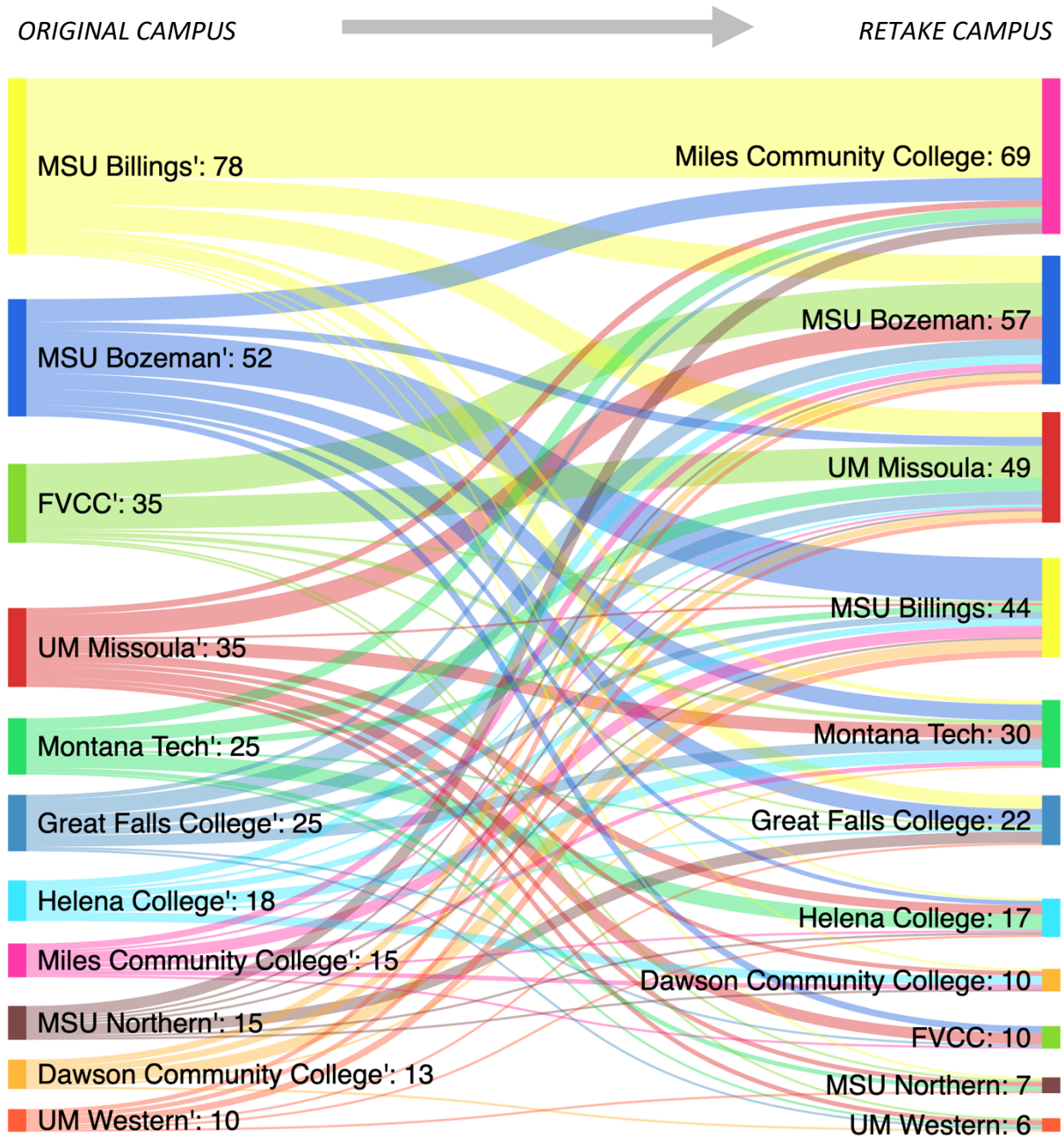
Repeated Courses Following Transfer

To determine whether common course numbering enables students to carry over completed coursework to their new campus and avoid repeating completed coursework, we reviewed transcript records for transfer students who took coursework in the 2018-19 and 2019-20 academic years and identified where students took courses they had passed in the previous 5-years (by policy, MUS institutions must accept coursework from regionally accredited institutions if it has been taken less than 5-years prior to the transfer term).

Figure 1 displays the results of this analysis. During AY 2018 and AY 2019, 262 unique students retook 322 courses that they had previously passed at another MUS institution. Of the repeated courses, 250 (78%) were taken by students in health programs (nursing, pre-medicine, surgical technology) with gated enrollment pathways. In other words, a significant portion of course retakes appear to be attributable to students aiming to improve a course grade so they can proceed in a health professions program with competitive admissions.

During this time period, MUS transfer students took a total of 184,609 courses.

Figure 1 - Campus flows for course retakes, AY 18 and AY 19



The top ten repeated courses were:

- WRIT 101 – College Writing I (31)
- SOCI 101 – Introduction to Sociology (24)
- BIOM 250 – Microbiology for Health Science (21)
- CHMY 121 – Intro to General Chemistry (19)
- CHMY 122 – Intro to General Chemistry Lab (18)
- M 121 – College Algebra (18)
- BIOH 201 – Human Anatomy and Physiology I (14)
- PSYX 100 – Intro to Psychology (12)

The Common Course Numbering campus liaisons reviewed this information as well as the raw transfer data and did not identify any patterns of repeated coursework that were clearly not tied to health professions students aiming to improve their grade.

Course Sequence Outcomes

Next, we reviewed key course sequences, to determine whether transfer students were adequately prepared for subsequent coursework. The common numbering process has faculty identify courses that overlap significantly (80% or more) in their learning outcomes. If this process identifies sufficiently equivalent courses, we would expect to observe little difference in students' performance in subsequent coursework, whether or not students took later courses at the same or different campuses.

We compared students' performance in the following sequential course pairs:

- BIOH 201 Human Anatomy and Physiology I and BIOH 211 Human Anatomy and Physiology II
- CHMY 121 Introduction to General Chemistry and CHMY 123 Introduction to Organic Chemistry and Biochemistry
- WRIT 101 College Writing I and WRIT 201 College Writing II
- PSYX 100 Introduction to Psychology and PSYX 340 Abnormal Psychology
- M 121 College Algebra and M 161 Survey of Calculus or M 162 Applied Calculus

Again, we reviewed students who took the second course during the 2018-19 or 2019-20 academic years.

BIOH 201 & BIOH 211

Same Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	269	3.78
B	170	2.93
C	103	2.35
D	24	1.95
F	13	2.00
P	4	2.00

Different Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	17	3.18
B	25	2.68
C	12	3.17
D	4	3.25
F	11	2.10
P	2	2.00

CHMY 121 & CHMY 123

Same Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	71	3.89
B	29	2.86
C	23	2.36
D	3	0.67
F	7	2.17
P	1	2.00

Different Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	16	2.87
B	10	3.00
C	5	2.00
D	1	3.00
F	2	2.50
P	1	3.00

WRIT 101 & WRIT 201

Same Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	185	3.25
B	97	3.15
C	31	2.56
D	3	3.00
F	11	2.44
P	-	-

Different Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	87	3.41
B	48	2.50
C	16	2.69
D	3	3.00
F	3	2.33
P	-	-

PSYX 100 & PSYX 340

Same Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	66	3.35
B	37	2.79
C	16	1.75
D	2	1.00
F	2	2.00
P	-	-

Different Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	64	3.40
B	29	2.85
C	7	1.86
D	-	-
F	2	2.00
P	-	-

M121 & M160/M161

Same Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	56	2.81
B	84	2.43
C	79	1.60
D	16	1.09
F	15	1.57
P	-	-

Different Campus for Sequential Course Pair

First Course Letter Grade	N	Average Second Course Grade
A	25	2.86
B	28	2.04
C	12	1.58
D	1	0.00
F	-	-
P	1	3.00

This analysis indicates little systematic difference in performance in the second course in a sequence between transfer and native students. Campus common course numbering liaisons reviewed this data but did not identify any discrepancies warranting additional follow-up or action.