

CCN Subcommittee Minority Report

CCN Math

Subcommittee Members

Randall Paul, Oregon Institute of Technology
Beatriz Lafferriere, Portland State University
Hayden Harker, University of Oregon
Sara Clark, Oregon State University

Co-chairs Celeste Petersen and Leanne Merrill

November 6, 2023

Re: Recommendation from the subcommittee

Be it resolved that the following members

Randall Paul
Beatriz Lafferriere
Hayden Harker
Sara Clark

Oregon Institute of Technology
Portland State University
University of Oregon
Oregon State University

of the CCN Math Subcommittee would like file a Minority Report to provide a record of their disagreement with the following motion:

I. In accordance with the mandates of SB 233, the Common Course Number Math Subcommittee recommends to the Transfer Council that: MTH 251Z- Differential Calculus be credited at 5 quarter credits.

II. In accordance with the mandates of SB 233, the Common Course Number Math Subcommittee recommends to the Transfer Council that: MTH 252Z- Integral Calculus be credited at 5 quarter credits.

Section A : Rationale & Alternative Recommendations

The above disagree with the following recommendation for the following reasons

- I. We were all pleased to serve on the Common Course Numbering Mathematics subcommittee. Despite coming from a wide variety of backgrounds and institutions, discussions were always collegial and respectful. On almost every issue we were able to reach a consensus that was acceptable to everyone. The only issue on which we could not find consensus was on the committee's recommendation that Math 251Z and Math 252Z should be 5 credit courses across all Oregon institutions of higher education. On this we must respectfully disagree with our colleagues. We are convinced that these courses should remain 4 credit hour courses.

The committee agreed that the fundamental problem lies in the fact that different Oregon institutions of higher education serve very different populations. For many years, a four hour calculus class has been quite adequate for the population of Oregon's public universities, which is dominated by full-time students, living on-campus, and arriving with reasonably good high school math preparation. (This is not to say that all of

these students pass. Far from it---calculus is hard.) However, members representing primarily community colleges argued passionately and convincingly that they cannot effectively teach calculus with just four weekly contact hours to their population of part-time, commuting students, many of whom have poor high school math preparation. Further, they argue, this is an equity issue, as their population consists of a much higher percentage of students who are historically underrepresented and underserved, including many people of color (POC). We agree with all of that, particularly that this is an equity issue. Where we disagree, is in the proposed solution of requiring all institutions to offer five credit calculus classes.

The committee agreed that the simplest solution would be to continue to let the individual institutions decide how many credit hours are appropriate for a calculus class serving their particular student populations. We understood, though, that that was not our charge. Forced to make a choice, the committee chose to require that MTH 251Z and MTH 252Z be five hour calculus classes. This choice comes with very real costs to both institutions and students. Besides the actual monetary cost of two additional credit hours (not a trivial expense at many of our universities), there is a significant additional cost in student time. Each hour spent in class requires several hours of study out of the classroom, yet there are only so many hours in each week. A full-time student trying to graduate in four years with a STEM degree will find those five-hour calculus classes onerous.

We should also not ignore the effect this change will have on STEM programs, almost all of which require calculus. These programs are already under significant pressure to reduce the total credit hours required for their degree, ideally to 180 credit hours. An additional two hours of calculus (for the two-course sequence) translates to half a course fewer in their program. This will be frustrating for both faculty and students in these programs since, at many of our universities, the two additional hours of calculus would be unnecessary.

- a. We whole-heartedly agree that all students should have the contact hours and support that they need to be successful. But there are other ways to increase contact hours and support at those institutions that need them besides imposing a fifth credit hour on all Oregon institutions. We suggest a "Corequisite Model," which is used at a number of institutions already. This model requires that students in a four hour calculus class also register for a one credit hour "math lab" which consists of three hours per week of additional examples, homework discussion, and one-on-one mentoring. Institutions that feel their students need the additional contact hours can require the math

lab as a corequisite. The four hour calculus class would transfer cleanly, as envisioned in the legislation. The math lab class would transfer as a 1 credit math elective.

Some of our colleagues stressed that, under this model, they were not fairly compensated for the time they spent teaching in this math lab.

They also point out that their institutions do not provide adequate tutoring opportunities for their students. We are very sympathetic to these concerns. (One of us went on strike a few years ago in part over these issues.) Nonetheless, we feel that it is incumbent on the individual institutions to provide the resources their students need to be successful, rather than imposing a burden on all Oregon institutions.

II. Rational is the same as I. above.

a. We believe the “Corequisite Model” will also work for Math 252Z.

Section B: Considerations

In conclusion, we ask the Transfer Council to consider these issues carefully and to do/consider the following:

- I. It is an enormous challenge to provide Oregon's diverse population with the access to higher education that they deserve. Students with weaker mathematical preparation, who come into higher education from more difficult circumstances, really should receive the additional support they need. But we do not believe that a blunt instrument like a credit hour added to all Oregon Math 251Z and Math 252Z courses is the correct approach. It will have real costs to Oregon students and Oregon's STEM programs. There are other, better ways to address this important challenge.

Signed by:

Name [Randall Paul](#)

Signature *Randall Paul*

Name [Beatriz Lafferriere](#)

Signature *Beatriz Lafferriere*

Name [Hayden Harker](#)

Signature *Hayden Harker*

Name [Sara Clark](#)

Signature *Sara Clark*

Date: November 6, 2023

Provide copies to:



CCN Mathematics
Chair/Co-chairs

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— END OF REPORT—