

## Nomination Dossier: Lauren DeDieu

University of Calgary Teaching Award

*Full-Time Academic Staff, Instructor*

### Teaching Philosophy Statement

It is amazing to be part of so many students' first- and second-year experience. I have had the pleasure to teach and coordinate over 5000 students in our first- and second-year service courses (MATH 249/265: first-year calculus; MATH 311: second-year linear algebra) since joining the University of Calgary in 2018. The majority of these students are non-math majors who require the courses for their degree. I instill a sense of confidence in my students by cultivating their critical thinking and communication skills to set them up for success in their future courses.

Through activities and assessments that 'look inside' mathematics and explore how math is used in the real-world, I work to illustrate the beauty of mathematics so that pre-service teachers feel inspired to share their passion for mathematics with their future students. I teach future K-12 teachers in our mathematics appreciation course (MATH 205) and our mathematical inquiry course (MATH/EDUC 305).

Through my teaching, I work to foster an excitement about mathematics, promote a sense of inclusion in the mathematical community, and empower students with strong aversions towards math to transform their fear into confidence. To achieve this initiative, I am guided by four key beliefs:

*Active Engagement:* I believe that *students learn mathematics by doing mathematics* and by engaging in the *metacognitive processes* of analyzing their learning, identifying areas for improvement, and modifying their behaviour as a result. To motivate students to actively engage and reflect, I employ active learning techniques in the classroom, encourage collaboration, provide frequent opportunities for feedback, and establish relevance in the subject matter by exploring real-world applications.

*Reducing Barriers:* I believe as an instructor it is my responsibility to make my courses as accessible as possible by *eliminating obstacles that may hinder student success*. These potential barriers include low confidence, cognitive load, understanding course expectations, and not feeling a sense of belonging in math classrooms. I work to overcome these barriers by promoting a growth mindset, being very intentional with the design of my course materials, and by interweaving collaborative activities throughout my courses to build an inclusive classroom atmosphere.

*Transferable Skills:* Many of my students will never use the majority of mathematical content they learn. So, what do I hope students take away from my courses? I believe that it is important for my students to refine their *critical thinking, communication skills, and independent learning abilities* in my courses. I work to achieve these learning objectives by incorporating mathematical writing and inquiry into my assessments.

*Reflective Teaching Practice:* As an instructor, I believe that I should engage in continuous growth to create better learning environments for my students. I work to achieve this by regularly collecting feedback from students and colleagues and by *engaging in critical reflection*. I make sure my teaching is informed by evidence-based instructional practices by contributing to the scholarship of teaching and learning and by taking advantage of professional learning opportunities.

*I love teaching mathematics and strive to create atmospheres where students can flourish.*

## Descriptions of Specific Strategies

In this section, I highlight the strategies and demonstrate the impact of my initiative to foster a sense of excitement, inclusion, and confidence in my students. These strategies are organized according to my four beliefs: active engagement, reducing barriers, transferable skills, and reflective teaching practice.

### Active Engagement

*Active Learning | Collaboration | Frequent Feedback | Flipped Classroom | Creativity & Real-World Applications*

#### Active Learning

I work to *motivate active engagement* by dedicating a large portion of class time to active learning activities. These activities give students the opportunity to get their hands dirty and engage with the material on a deeper level. For example, in my first-year calculus class (MATH 265, ~360 students), I design Top Hat (classroom response system) questions that push students to think critically about what they just learned. I design the questions to highlight common misconceptions. Students first think about the question independently and vote; I then ask students to turn to their peers and convince them that their response is correct. Students then revote. This activity promotes metacognition by bringing to light gaps in understanding (e.g., see *MATH 265 student quote, right*). I know that I've designed a great question when the room erupts into heated debate - there are often audible gasps when I reveal the answer and bring the class together to discuss.

*"I thought answering the Top Hat questions, then going over the answer as a class was helpful in learning the course material because I was able to try out the questions myself and sort of get a gauge of what I knew and didn't know."*

– MATH 265 Student

#### Collaboration

In smaller classes and tutorials, I design *collaborative activities* that push students to apply what they have learned to new situations. I believe that working in groups can be extremely beneficial, not only for the deeper engagement and learning it promotes, but also for building a sense of community. In Winter 2021 when classes were online, my MATH 205 students were especially appreciative of the in-class group activities, as many of them were feeling isolated and disconnected from their peers (e.g., see *MATH 205 student quote, right*). Twice per week, students worked together on a problem in breakout rooms and recorded their responses on an online form that provided scaffolding and hints. One such activity was the back-of-the-envelope calculation, "If our government decided that education in Canada should be free, then how much would that cost?" These activities were assessed based on an end-of-term critical reflection, where students reflected on the activities and documented their overall learning (e.g., see *MATH 205 student quote, bottom right*).

*"The opportunity to meet people reallllly helped my mental health."*

– MATH 205 Student

*"Group work really helped, especially when I was struggling with understanding a concept."*

– MATH 205 Student

#### Frequent Feedback

In addition to providing immediate feedback in class through active-learning and collaborative learning activities, I promote student engagement by using *frequent low-stakes formative online assessments*.

For example, in my second-year linear algebra class (MATH 311), students complete biweekly online assignments where they put what they learned in class into practice; students receive 10 attempts on each problem, and the online system provides feedback when they get a question wrong, then gives a similar problem to try with new numbers. Giving many attempts keeps the stakes low, while providing motivation to engage with the material.

## Flipped Classroom

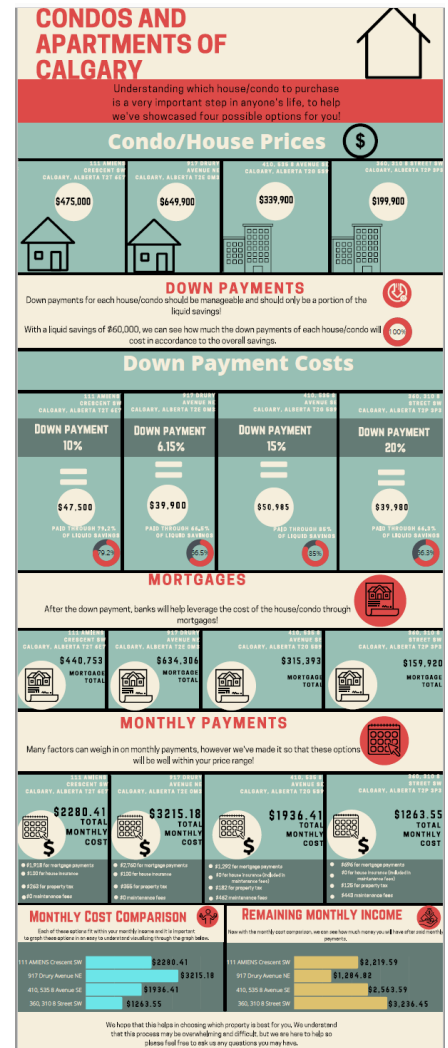
The first-year calculus course, MATH 265, is unique in that students in this course have already seen calculus in high school. As such, it can be difficult to strike a good pace, as many students are familiar with the content, while others need a refresher. This inspired me to partially *flip* MATH 265. Using the 140 videos I recorded during online COVID teaching, I designed the course so that students work through these 10-15-minute content videos prior to lecture. I created fill-in-the-blank slides so that students could take notes, and each topic had an associated online quiz for students to check their understanding of the video content. In class, we reviewed the content highlights, then dived into more challenging examples. This format worked very well both online and in-person, and I received very positive feedback from students, as they were able to work through the core content at their own pace and receive immediate feedback on their learning via the quizzes (e.g., see MATH 265 student quote, right). Moreover, implementing these weekly quizzes motivated students to regularly visit my office hours and the Math Help Centre - I noticed a notable increase in the number of visits. All offerings of MATH 249/265 have used my videos and quizzes since their creation.

*“I think weekly quizzes were very supportive because after knowing my total points, I immediately knew my strengths and weakness and I was able to focus on practising my weakest points.”*  
 – MATH 265 Student

## Creativity & Real-World Applications

I boost student motivation by creating assessments that encourage *creativity* and connect to *real-world applications*. For example, in my appreciation of math course (MATH 205) students chose their own topic and created a presentation that addressed the question, “How has math impacted the world?” (e.g., see MATH 205 student quote, below). In another MATH 205 project, students worked in pairs and acted as financial advisors where they created a professional report for their client, advising her about mortgage options and how much house she could afford (e.g., see sample of student work, right). Students did an amazing job - I was incredibly impressed!

*“I loved the creativity and freedom associated with this presentation and appreciate it greatly, it allowed for passion and genuine interest to be integrated into this project.”*  
 – MATH 205 Student



Student Work: Financial Project

## Reducing Barriers

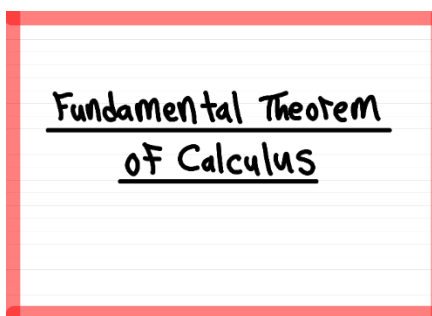
Confidence | Cognitive Load | Course Design | Sense of Belonging

### Confidence

A barrier that many of my students struggle with is their *pre-existing feelings towards mathematics*. Many of the courses I teach are first- and second-year courses for non-math majors, and many of my students enter the classroom with strong aversions towards math. For this reason, one of my main goals is to instill a sense of confidence in my students. I want students to leave my course feeling proud of their achievements and for the conviction that ‘hard work pays off’ to carry forward into their future tasks. I work to promote this growth mindset by encouraging hard work, and by providing ample opportunities for success through low-stakes assessments where students can continue trying a problem until they master it. The most rewarding feedback I receive is from students who let me know that they were scared coming into my course but finished feeling very confident in their mathematical abilities (e.g., see MATH 265 student quote, right).

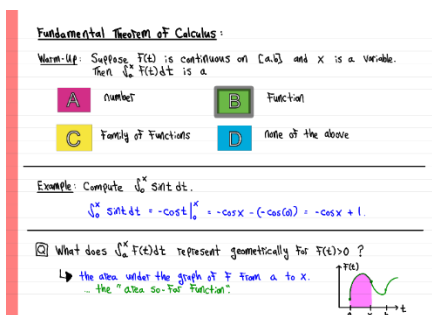
“I wanted you to know that I really appreciate how you set me up for success in this class. This class boosted my confidence in my math skills, and ended up being my favourite course!”  
– MATH 265 Student

Sample: Course Notes



### Cognitive Load

One potential barrier to student success is *cognitive load*; our working memory can only hold a limited amount of information at one time, and once it reaches its capacity it is very difficult to process new information. I am very intentional in the way I design my lectures to help reduce cognitive load. For example, my lecture notes are concise and colour-coded so that important information is easy to identify. I organize my notes into small segments, where each segment has its own distinct colour and title slide (e.g., see sample notes, right). This design provides re-entry points so that students can reengage with the lecture if they become lost. During class, I stop at least once every 10 minutes for students to try a problem on their own; this gives students a chance to process the material they have just seen and provides another re-entry point into the lecture. I also keep cognitive load in mind when designing online courses. For example, my pre-recorded videos are split into digestible 10-minute chunks. My accessible lecture design has received incredibly positive feedback from students (e.g., see student quotes, below and right).



“I am really enjoying the pre-recorded videos you have put up! I love the short format as often I find it difficult to focus with the long lectures.”

– MATH 265 Student

“As an individual with ADHD, I find it very difficult to keep my thoughts organized in my head and on paper. Lauren’s intensive breakdowns of slides/concept definitions/applications, pairs with her use of colours, made it infinitely easier to learn associations, algorithms, and patterns that would otherwise be convoluted and confusing.”

– MATH 305 Student

## Course Design

Another obstacle that can negatively impact student success is *keeping track of important information*, such as assessment deadlines and expectations. I organize my D2L shell so that it's visually appealing and so that important information is easy to access. For example, in my first-year calculus course, I make weekly checklists which have links to all readings, videos, practice problems, and assessments that are due that week. This organization provides more clarity and can help reduce stress (e.g., see *MATH 265 student quote, right*).

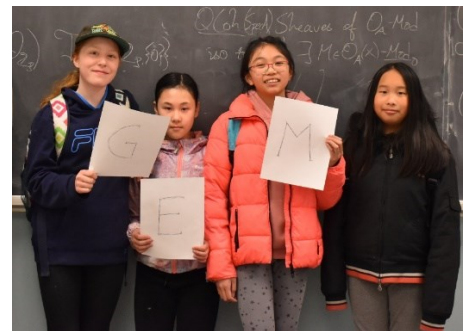
*"WEEKLY CHECKLIST!!!! omg this helps so much!!!! It helps me organize what I need to get done and what I still have left to do in the week. For someone who's as spread out as possible, it helps a lot!"*  
– MATH 265 Student

## Sense of Belonging

I am cognizant of the fact that many of our students who are traditionally underrepresented in STEM may not feel a *sense of belonging* in a math classroom. I strive to create an atmosphere where everyone feels included and feels safe asking questions (e.g., see *MATH 311 student quote, right*). I begin building this inclusive community before the class begins by asking students to start a thread on the D2L Discussion Board where they share their preferred name, gender pronouns, a picture of themselves, and their interests. Students have shared that this activity helped them to make friends and form study groups. I continue building this community throughout the semester by incorporating collaborative learning activities into my courses, such as groupwork-based tutorials. I also bring a lot of enthusiasm to my teaching, am encouraging and upbeat, and make myself as available as possible to students by staying after class and holding group office hours in our department's Math Help Centre.

*"I found it really heartening to look around my Math 311 classroom this semester and see loads of women, including women in the front rows and women freely asking lots of questions during lectures. I'd overhear girls in tutorial chatting about matrices, like it was genuinely interesting to them and wasn't just an annoying thing to live through. It made me smile."*  
– MATH 311 student

I also work to promote a sense of belonging in the mathematical community among K-12 students – our future University of Calgary students. Since joining the University of Calgary, I have contributed to eleven enrichment and outreach initiatives for junior high and high school students. I am particularly proud of a program I created in 2019 called 'Girls Excel in Math (GEM) Calgary'. GEM is a Saturday morning program for junior high school students who identify as girls. The program aims to combat gender bias and stimulate girls' interest in mathematics by having fun participating in collaborative, non-competitive mathematical activities (see *photo and participant quote, right*). It encourages students to think of themselves as part of the mathematical community and exposes students to female role models, including several of my undergraduate students. In recognition of these efforts, I won the *2020 Faculty of Science Award of Excellence: Early Career Community Engagement Award* and was nominated for the *University of Calgary Equity, Diversity, and Inclusion Award*.



Girls Excel in Math (GEM) Calgary

Parental permission was given to share this photo.

*"With GEM I was able to discover a new passion for mathematics and make new friends who shared the same interest in math."*  
– GEM participant

## Transferable Skills

Communication & Critical Thinking | Inquiry & Independent Learning

### Communication & Critical Thinking

I am passionate about teaching students how to *communicate mathematically*. I believe that emphasizing mathematical communication is important because it helps students develop *transferable skills* such as communicating complex ideas to non-experts and creating logical arguments. Emphasizing precise mathematical writing also encourages *critical thinking*, because the focus moves from finding ‘the answer’ to analyzing and synthesizing information to provide an appropriate amount of justification for the intended audience; this encourages students to learn the content at a deeper level. One of the ways I promote mathematical communication in my first-year calculus (MATH 249/265) course is by including written problems on midterms and grading these problems according to a rubric that has both a ‘mathematics score’ and a ‘communication score’ (see rubric and MATH 265 student quote, below).

#### MATH 265 Communication Rubric:

Communication Score (3pts): Explain your work as if you were teaching a classmate!

Attribute	Criteria	Excellent (3pts)	Good (2pts)	Needs Improvement (1pt)	Not Present (0pts)
Communication Score	Submission is well articulated using proper <b>notation</b> (e.g., all variables are defined, limit notation is used when calculating limits, etc.), <b>full sentences</b> are used to help the reader navigate (e.g., solution is clear and organized, computations are introduced, results are clearly articulated), and there is <b>no extraneous detail</b> (e.g., no irrelevant results or computations).	The submission is <b>complete &amp; clearly</b> communicated and follows <b>all</b> of the communication criteria (notation, prose, extraneous detail).	The submission is <b>mostly complete &amp; clearly</b> communicated and follows <b>most</b> of the communication criteria (notation, prose, extraneous detail).	The submission is <b>incomplete and/or unclearly</b> communicated and follows <b>some</b> of the communication criteria (notation, prose, extraneous detail).	The submission is <b>incomplete and unclearly</b> communicated and follows <b>few</b> of the communication criteria (notation, prose, extraneous detail).

“Throughout this course my communication has improved drastically.”  
– MATH 265 student

I also encourage mathematical communication through in-class activities, projects, essays, poster presentations, and peer-review activities. For example, in my second-year linear algebra class (MATH 311), students engaged in a weekly discussion board activity where they attempted a proof and provided constructive feedback to two peers. At the end of the semester, they wrote a critical reflection about what they learned and how their proof-writing had evolved. These activities not only helped students learn the content at a deeper level, but in end-of-term reflections students shared that the habits of mind they developed, such as problem solving and critical thinking, positively influenced their performance in their other courses and everyday lives (e.g., see MATH 311 student quotes, below and right).

“Proof writing has improved my ability to problem solve and understand concepts more generally. I am presently taking a higher-level macroeconomics class, and I found I was able to use many of my proof writing strategies to approach complex questions.”  
– MATH 311 student

“I could see clearly that the way I communicated in my everyday life was changing. In a normal conversation, I would detect flaws in logical arguments and point them out.”  
– MATH 311 student

## Inquiry & Independent Learning

I believe that it is incredibly important for my students to cultivate *their independent learning and inquiry skills* so that they are set up for success in their future careers. In MATH/EDUC 305 (~40 students), one of our major learning outcomes is for students to ‘ask mathematical questions that sustain engagement in mathematical inquiry’. To achieve this objective, my co-instructor, Dr. Paulino Babb, and I designed a ‘Mathematical Question Asking’ assignment where students choose a problem and engage in inquiry by asking questions, making conjectures, and seeking generalizations. In other words, students engage in mathematics like a mathematician (e.g., see *MATH 305 student quote, right*). Students document their problem-solving journey and thinking processes in an end-of-term presentation and a typeset summary of results. By authentically engaging in mathematics, students begin to see math not as a static discipline, but as one that is constantly changing and evolving. Since the majority of our students plan on becoming K-12 teachers, this experience can inspire their future teaching and shape the next generation of mathematical thinkers.

In my courses, I try to set very clear goals and assessment expectations for my students. One of the ways I do this is by providing detailed rubrics and assessment instructions (e.g., see *rubric, right*). These rubrics evolve from semester to semester based on student feedback and reflection. I also like to provide opportunities for early feedback. For example, in the MATH/EDUC 305 ‘Mathematical Question Asking’ assignment, students submit a rough draft and receive in-depth feedback. This helps to clarify expectations so that students know exactly what they need to do to succeed.

*“The opportunity to pursue my own research avenue for a project was one of my most memorable and important experiences of my undergraduate degree. The techniques described to aid in developing proofs have helped me consistently over the years including now in my master’s degree. Had I not taken MATH 305 I likely would not have applied for graduate school as this course was my first opportunity in my undergraduate degree to pursue research freely and was when I decided I would enjoy a career centered around mathematics.”*

– MATH 305 student (currently a Math/Stats graduate student)

**Rubric: ‘Mathematical Question Asking’ assignment**

Criteria	Exceeds Expectations (10 points)	Meets Expectations (8.5 points)	Partially Meets Expectations (7 points)	Needs Improvement (5 points)	
<b>Narrative and Reflection</b>	Speakers provide a narrative that clearly documents their problem-solving journey and provides insight into their thinking processes (e.g., Where did you get stuck? How did you overcome that obstacle? What ‘aha’ moments did you have? Did looking at a specific example lead you to a generalization? What questions did you pose as you moved through your inquiry? Were there images or analogies that advanced or hindered your thinking?)	The narrative is <b>highly effective</b> in illuminating the problem-solving journey and provides <b>in-depth insight</b> into the speakers’ thinking processes.	The narrative is <b>effective</b> in illuminating the problem-solving journey and provides <b>insight</b> into the speakers’ thinking processes.	The narrative is <b>somewhat effective</b> in illuminating the problem-solving journey and provides <b>partial insight</b> into the speakers’ thinking processes.	The narrative is <b>ineffective</b> in illuminating the problem-solving journey and provides <b>weak insight</b> into the speakers’ thinking processes.
<b>Summary of Results</b>	The presentation and appendix demonstrate in-depth mathematical inquiry (e.g., include extensions, generalizations, special cases, examples, and proofs) that is mathematically correct and clearly communicated (e.g., communicated at a level that a classmate can understand, includes necessary definitions/terminology, appendix is organized and typeset).	The summary of results demonstrate an <b>outstanding</b> amount of depth and are <b>elegantly</b> communicated.	The summary of results demonstrate a <b>substantial</b> amount of depth and are <b>well</b> communicated.	The summary of results demonstrate a <b>sufficient</b> amount of depth and are <b>somewhat well</b> communicated.	The summary of results demonstrate a <b>minimal</b> amount of depth and/or are <b>ineffectively</b> communicated.
<b>Delivery, Organization and Creativity</b>	Delivery techniques make the presentation compelling (e.g. natural conversational tone, appropriate pacing for audience understanding, slides easy to understand, content is sequenced in a thoughtful way, appropriate amount of text on slide, slides aesthetically pleasing, presentation meets time requirements. <i>By natural conversational tone, we mean that the speaker should speak directly to the audience in an enthusiastic way and should not sound like they are reading from a script.</i> )	Delivery techniques are <b>exemplary</b> and are <b>incredibly</b> effective in making the presentation compelling.	Delivery techniques are <b>very good</b> and are <b>very</b> effective in making the presentation compelling.	Delivery techniques are <b>satisfactory</b> and are <b>reasonably</b> effective in making the presentation compelling.	Delivery techniques <b>need improvement</b> and are <b>partially</b> effective in making the presentation compelling.

## Reflective Teaching Practice

Collecting Feedback | Professional Learning & Development | Scholarship of Teaching and Learning

### Collecting Feedback

I *collect feedback* from my students a few weeks into the semester to see how things are going and to identify changes I can implement to create the best possible learning atmosphere. After administering a survey, I reflect on the feedback and share a summary of the results with my class (*e.g., see sample summary, right*). When I coordinate first-year calculus (MATH 265, ~1000 students) I also collect feedback from class representatives who bring student concerns to my attention and work collaboratively with me to create strategies to support students. My students appreciate that I ask for their input and make changes based on their suggestions (*e.g., see MATH 265 student quote, right*).

### Professional Learning & Development

In my commitment to continuous growth, I have participated in 22 conferences, 70 seminars/workshops, and 2 professional development training programs concerning teaching and learning since 2018. I also regularly engage with colleagues through recurring teaching seminars, teaching squares, and communities of practice. These professional learning activities have been fundamental to my development as a teacher, as they have inspired me to try new technologies and activities in my classroom. For example, the best practices in rubric design I learned through the Taylor Institute's Academic Staff Certificate in Teaching and Learning program (~68 hours) had a huge impact on my teaching as I was able to improve the clarity of my assessment expectations and the quality of feedback I provided my students. In recent years, I have also led professional development activities for prospective teachers and early-career colleagues. For example, in Fall 2021 I designed and led a teaching community of practice for graduate students and postdocs in the Department of Mathematics and Statistics.

### Scholarship of Teaching and Learning

Engaging in the scholarship of teaching and learning strengthens my teaching by allowing me to better understand the impact of my teaching practices. Since joining the University of Calgary in 2018, I have given 20 presentations (16 national, 4 institutional) and contributed 7 articles concerning the teaching and learning of mathematics (*e.g., see scholarship sample, right*). I also serve in a leadership role within the national post-secondary math teaching community; I am a founder and editor of the 'First-Year Math & Stats in Canada Newsletter' and organize associated national seminars and workshops.

### Sample of MATH 205 feedback summary:

1) Are there any changes I can implement to make the course a better experience for you?

Response	Number of Students	Things I can do
No	41	I'm happy to hear that the majority of students are happy with the course so far! =)
Post lecture notes before class	2	Okay, sure! I'll post 'Early Slides' on D2L.
Having all due dates on the course calendar would be lovely.	1	Sure, I'll add these soon!

2) What things do you like about the course so far?

Response	Number of Students
In-class activities/chatting with other classmates	25
Organization/ clarity of expectations	15
The content/ slides	14
You/ the way you teach	11
The pace/ workload	10
The assessments	6
Everything	3

*"Dr. DeDieu listened to our feedback and made changes based on our suggestions, such as setting up a weekly poll so that we could vote on which practice problems or Dino problems to go over during the live sessions, which I really appreciated."*  
 – MATH 265 Student

### Scholarship Sample

- Publication: DeDieu, L., Lovric, M. (2018). Student Perceptions of the Use of Writing in a Differential Equations Course. *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*, 28(2), 166-185.
- Presentation: *Collaborative Learning in Tertiary Mathematics Classrooms*, 2019 CMS Winter Meeting, Session: Teaching Strategies for Increasing Diversity in Math, Dec. 8, 2019 (Toronto, ON).



## Summary of Data from Student Feedback

My Faculty of Science Teaching Feedback Forms have had very positive feedback, with many students complimenting my enthusiasm, organization, colourful lecture notes, and engaging classroom activities. My *Universal Student Ratings of Instruction (USRI)* scores also demonstrate that I do a great job responding to student questions and that I treat students with respect. All USRI questions for all courses where I was the sole instructor have had a mode of 6 or 7 out of 7 (see USRI table, right).

At the end of each semester, I analyze the student feedback I've received and make a plan for how I will incorporate that feedback into the next course offering. For example, in Winter 2019 I co-taught MATH/EDUC 305 with a colleague from the Werklund School of Education; this was the first offering of this brand-new course and my co-instructor and I designed all materials and assessments from scratch. The student feedback was incredibly valuable, and we made major changes to the course based on it. In particular, we created stronger alignment between content and assessments to boost motivation, made assessment expectations clearer by scaffolding assessments and providing more opportunities for feedback, and improved group dynamics by introducing 'team assessments'. I was very pleased to see that our USRI scores greatly improved the second time we taught the course, which suggested that the changes we implemented had a positive impact on student learning (*almost half of the Winter 2019 USRI questions had a mode below 5, but in Winter 2020 all had a mode of 6 or 7; see USRI table above*).

*"This was the least stressful and most enjoyable math class I have taken yet in university – not because the material was easy, but thanks to your organization and effort Dr. DeDieu. I really appreciated the clear, organized slides and teaching. I also appreciated all the examples we did in class, the weekly homework problems and all the practice problems and review packages you provided for us.*

*University would be so much more enjoyable if other professors were as organized and caring as you."*

– MATH 311 Student

		USRI Survey Questions (mode score out of 7)													
		1. Term	2. Enough Detail in Course Outline	3. Course consistent with outline	4. Content well organized	5. Student questions responded to	6. Communicated with enthusiasm	7. Opportunities for assistance	8. Students treated respectfully	9. Evaluation methods fair	10. Work graded in reasonable time	11. I learned a lot in this course	12. Support materials helpful	USRI Enrolment	Notes
MATH 205: Mathematical Explorations	W2021	7	7	7	7	7	7	7	7	7	7	7	97		
MATH 249: Introductory Calculus	P2020	7	7	7	7	6	7	7	6	6	6	7	171	*	
MATH 265: University Calculus I	F2021	7	7	6.5	7	7	7	7	7	6	7		304	*	
	S2021	7	7	7	7	7	7	7	7	7	7		38		
	F2020	7	7	7	7	7	7	7	7	6	7		345		
	W2020	6.5	6.5	7	7	7	7	7	7	6.5	6.5		19	*	
	F2019	6	6	7	7	6	6	7	6	7	6		315		
	S2019	7	7	7	6	6	7	7	6	7	6.5		28		
	F2018	6	7	7	7	6	7	7	7	7	6		116		
MATH/EDUC 305: Inside Mathematics	W2020	6	6.5	6	7	7	7	7	7	7	7		37	**	
	W2019	4	3	7	7	7	6	7	3	3	4.5	6	46		
MATH 311: Linear Methods II	F2021	7	7	7	7	7	7	7	6.5	6.5	7	7	92		
	W2021	7	7	7	7	7	6.5	7	7	7	7	7	80	*	
	F2019	7	7	7	7	7	7	7	7	6	6	6	95		
	W2019	7	7	7	7	7	7	7	7	7	7	7	88		
	F2018	7	7	7	7	7	7	7	7	7	7	7	91		
	P2018	7	7	7	7	7	7	7	7	7	7	7	69		
MATH 431: Abstract Algebra II	F2018	7	7	7	7	7	7	7	7	7	7	7	18		
If there was more than one mode, then the average of the modes is reported.															
*Low Response Rate (below 20%)															
**MATH/EDUC 305 was co-taught with Dr. Paulino Babb from the Werklund School of Education.															

## Reflective Summary Statement

*Active Engagement:* My teaching has evolved significantly over the past four years at the University of Calgary. My classrooms are now far from quiet with students actively engaging through carefully designed collaborative activities. Students receive frequent feedback through formative assessments and are motivated to develop a deep understanding of the content through projects that promote creativity and explore real-world applications. The biggest ‘aha’ moment I’ve had recently was the realization that assessments should serve as a course roadmap; this inspired me to create low-stakes assessments for my calculus courses that guide students through the learning objectives and material. The uptick in course engagement was striking and students reported that these quizzes “helped immensely” during midterm preparation. I am excited to continue finding innovative strategies to promote active engagement and boost motivation.

*Reducing Barriers:* The most rewarding part of my teaching practice is when students share that their attitudes and feelings about their mathematical abilities changed throughout my course (*e.g., see quotes throughout dossier*). I want students to feel empowered as problem-solvers and confident in their quantitative reasoning skills; knowing that the steps I take to set students up for success have positively impacted the confidence and mindsets of my students makes me smile. I am dedicated to making my courses even more accessible by engaging in professional learning opportunities that enhance my understanding of equity, diversity, and inclusion principles and strategies. I look forward to engaging in more outreach initiatives so that our future students enter university with positive feelings towards mathematics. Later this semester, I will be taking steps in this direction by leading a half-day workshop for in-service teachers about gender bias in mathematics.

*Transferable Skills:* Mathematical communication and inquiry activities serve as wonderful vehicles to help students cultivate their communication, critical thinking, and independent learning abilities. I am excited to continue developing and refining my communication and inquiry activities, and plan to build more peer-review into my courses. I am also looking forward to sharing my activities with the wider mathematics teaching community through talks and publications.

*Reflective Teaching Practice:* I am very grateful to my students for their wonderful feedback that has helped me grow as a teacher. My course design, assessments, and classroom activities are constantly evolving based on student feedback, personal reflection, and new insights I learn through scholarship and professional learning activities. One such activity that I found particularly valuable this year was a book club/teaching triangle I participated in with colleagues from the Faculty of Science. Our regular coffee chats and classroom observations inspired me to try new things this past semester, such as creating Top Hat questions for my second-year linear algebra class designed to promote a deeper understanding of the material through peer instruction. Based on our conversations, I am inspired to build more stories and framing questions into my lectures to further motivate student learning.

I am proud of my initiative to foster a sense of inclusion and excitement about mathematics in my students and empower them to move from fear to confidence. I am also excited by the progress I’ve made so far in my teaching practice and the demonstrated impact I’ve had on student learning. I look forward to engaging and motivating future students by exploring the beauty of mathematics and can’t wait to see them succeed at the University of Calgary and beyond!