

Teaching Dossier
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BIOGRAPHICAL OVERVIEW

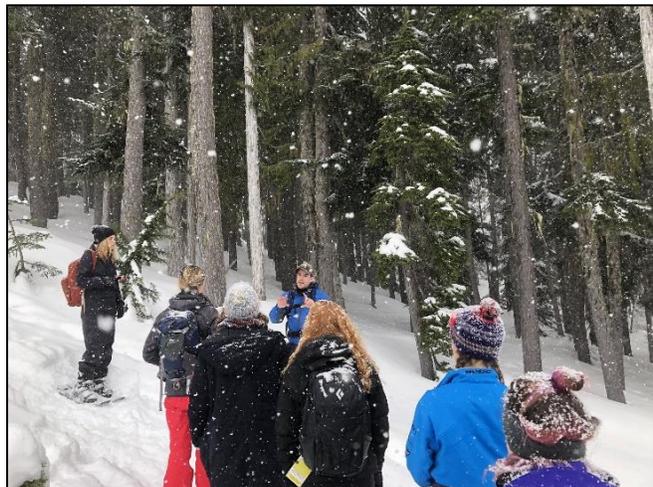
I am a Post-Doctoral Researcher at the University of Saskatchewan under the supervision of Dr. Colin Laroque. My current position involves working with rural landowners in Saskatchewan, and helping them understand and learn about best-practices for climate change mitigation and adaptation on their land. I travel extensively throughout the province providing educational workshops and presentations on the benefits of agroforestry practices on croplands. I am also currently working with the Canadian Light Source’s ‘Students on the Beamline’ where I am mentoring a group of students from Brampton, Ontario develop and carry out an environmental research project.

Prior to my current position, I was the executive director of the UNESCO Southwest Nova Biosphere Reserve Association (SNBRA) where I developed education programmes focused on climate change, sustainability, and ecosystem management. From 2010-2018, I was employed by the University of Victoria and Mount Allison University where I taught as a specialist and sessional instructor for a wide range of courses focused on the environment and climate change. I have, in the past, supervised undergraduate student research projects, served as a mentor for independent research projects, and tutored students with learning challenges.

TEACHING STATEMENT AND PHILOSOPHY

In 2015, I developed my first teaching dossier where my statement and philosophy long-winded, focusing on self-inquiry and experiential learning. While I still believe in the former, experiential learning in geography, and other environment-based disciplines, is not always inclusive nor is it considered universal design. Through introspection, continued learning from mentors, and training, my teaching statement has dramatically changed and become rather simple. My teaching statement is:

“Grow.”



Talking to students about how trees and snow interact during a field trip to Mount Washington, BC in 2016 for the University of Victoria’s ‘Mountain Meteorology’ course.

A simple verb that means so much to me as a person. It serves as a reminder to keep a growth mindset when teaching or learning and to never consider my development as an instructor complete. While the statement is, by design, unachievable, I have developed several other sub-statements to help retain focus on the larger objective of growing:

As a teacher, I...

- grow to meet my students needs as learners from course-to-course and class-to-class;
- reflect on feedback and grow my teaching practices accordingly;
- acknowledge my position of power and diverse perspectives;
- foster a safe and inclusive environment through my position of power;
- recognize that my students are individuals with lives outside of the classroom;
- encourage self-inquiry and learning outcomes to meet student interests and course needs;
- own my mistakes and take responsibility to do better.

Through formative assessment and self-reflection of both myself as an instructor and students, I am able to respond to student needs and interests quickly and efficiently.

Course Design

Based in large part on my experiences as a teacher, my priorities for students are to:

- define challenging, yet appropriate, expectations for unique student groups (per course);
- give students a reason to want to meet those expectations;
- and, allow them to delve further into their own passions and interests.

By challenging my students at an academic level, they have continued to rise to the occasion and enjoy their learning experience. While the content may be challenging for students, topics and exercises are open enough for students to explore their own interests within the class. This allows students to understand how broader subject matter may be directly linked to their interests or other courses.

For example, when teaching an introductory geomorphology course, I asked students to write a paper on a self-directed topic with a geomorphological focus (Appendix C). While some students chose one of the predeveloped topics, if they could not think of anything that interested them, many students took it upon themselves to investigate topics that excited them. One student wrote a paper on arctic food security and how melting permafrost was a yet unqualified risk to many communities. Another student examined how periodic flooding in their hometown is the result logging and geomorphic activity that will increase in frequency with climate change.

Not every student is, or will be, a major in the course that I am teaching nor will they have an inherent interest. With this recognition, I seek for students to see, at a broad level, how the subject material is associated with what they find interesting. This form of inquiry largely draws upon Tobler's first law of geography which is "everything is related to everything else, but near things are more related than distant things."

Inclusiveness and Diversity

For several years, I tutored and mentored students with learning challenges for the Meighan Centre at Mount Allison University. From these experiences, I have gained a clear perspective for different learning styles and unique challenges that students face both inside and outside of the classroom. Importantly, my experiences have shown me that universal design and thinking of my students as people first can go a long way in providing a safe and inclusive learning environment.

To be an inclusive educator and respect different world views, I believe it is critical to recognize my own privileges that I take for granted every day. Some of my identifiable privileges include being: white, male, straight, cisgender, no physical disabilities, and English as my first language. With some of these privileges recognized and critical self-reflection, I can enhance learning outcomes through universal design surrounding assignments, accessibility to textbooks, and other possible roadblocks.

In addition to recognizing some of my privileges, I also try to take a two-eyed seeing approach to my teaching and learning. Including western and indigenous knowledge and ways of knowing. It is about seeing both and using them together to achieve better learning outcomes and integrative science work. In class, my students and I also recognize where we come from and who was in our place of learning before us through traditional land acknowledgements. For example, I acknowledge that I am from Kesputwitk, Mi'kma'ki and am in Treaty 6 Territory, traditional lands of First Nations and Métis people.

Normalizing inclusive practices through universal design is critical. I recognize that my students are people first and provide avenues for them to prioritize their personal or professional life before the class. One way in which I do this is through a 'free' extension for every student each semester (see Appendix B - Table B1 for specific comments from students). Some students may be too embarrassed, fear rejection, or feel like they need to explain a delicate topic to their instructor to get an extension. In this situation, they can now get an extension, without fear of rejection, on *any* assignment. It also normalizes the behavior illustrating that I, as an instructor, am willing to grant extensions if an additional one is required. While some students may not need the extension, others have expressed deep gratitude because they were able to get an extension and focus on other, more demanding, issues at the time. This appreciation has often transformed into better overall learning experiences by students.

In the future, I hope to hone how I respond to different world views as well as promote a safe and inclusive learning environment. As I continue to learn about universal design in the classroom, my testing and assessment strategies will be changing to be more inclusive while providing students with the same, or better, learning outcomes.

PAST TEACHING RESPONSIBILITIES AND EXPERIENCE

I have served as a course teaching assistant/specialist instructor for 22 undergraduate classes since 2010. Topics of instruction have ranged from introductory-level physical geography courses to statistics to research-based capstone courses. I have maintained high evaluations in many feedback categories (>4 of 5) and students highlight my approachability, organization, and enthusiasm in feedback forms. I have also instructed 'Introduction to Geomorphology' at the University of

Victoria where students similarly highlighted my approachability and enthusiasm as positive components of the class (Appendix A and B).

Employment

Research Mentor, Canadian Light Source, University of Saskatchewan, 2019-2020

Mentored high school students in the development of an environmental research project from Brampton, Ontario. Duties included bi-weekly skype meetings, professional advice, help with data collection, and supervision of research activities.

First Year Research Experience Coach, University of Saskatchewan, 2019

Mentored first-year undergraduate students conducting research. Facilitated workshops and provided advise on the scientific method, writing, and research techniques.

Courses: Renewable Resources and Environment.

Instructor, University of Victoria, 2017

Developed course outline, learning outcomes, laboratory exercises, lectures, and assignments for a class of 100 students.

Courses: Introduction to Geomorphology (2nd year); Tree-Rings and Fire History (4th year).

Specialist Instructor, University of Victoria, 2013-2018

Taught multiple laboratory/tutorial sections to enhance learning outcomes for the corresponding courses. Led students in field work exercises, laboratory experiments, and how to write.

Courses: Physical Geography; Introduction to Quantitative Methods; Introduction to Geomorphology; Landscape Ecology; Field Surveying; Advanced Topics in Geographic Information Systems; and Field Studies in Physical Geography.

Teaching Assistant, Mount Allison University, 2010-2013

Taught and graded multiple laboratory/tutorial sections to enhance learning outcomes of students taking a variety of courses.

Courses: The Physical Environment; Geomorphology; Weather and Climate; Research Methods in Environmental Science; and Introduction to Dendroarchaeology.

Tutor, Meighan Centre for Learning Assistance and Research, Mount Allison University, 2010-2013

Tutored undergraduate students with learning challenges through a variety of teaching methods and techniques individually suited to each person.

Courses: The Human Environment; Geographic Information Systems; and Geomorphology.

Courses Instructed

Renewable Resources and Sustainability, University of Saskatchewan, 2020

Expected to teach an introductory undergraduate course with 60 students that focuses on sustainability, climate change, and renewable resources in Canada. The class has a two-hour weekly lecture, weekly laboratory, and group project with the University of Saskatchewan's First-Year Research Experience (FYRE).

Introduction to Geomorphology, University of Victoria, 2017

Taught a second-year undergraduate course with 96 students that focused on recognizing and explaining earth surface processes in different environments. The class had a weekly laboratory component, written paper assignment, and two-hours of lecture.

Teaching Assistant Courses

Name of course	No. of sections taught	Years taught	Course level
Introduction to Geomorphology	7	2011-2018	2 nd year
Field Studies in Physical Geography/Research Methods in Environmental Science	3	2012-2015	4 th year
Field Surveying	3	2017	3 rd year
Physical Geography/ The Physical Environment	3	2011-2014	1 st year
Advanced Topics in Geographic Information Sciences	2	2014	4 th year
Introduction to Quantitative Methods	1	2013	2 nd year
Landscape Ecology	1	2013	3 rd year
Weather and Climate	1	2012	2 nd year
Introduction to Dendroarchaeology	1	2012	4 th year

Guest Lectures

Agroforestry: Shelterbelts in Saskatchewan and how they help us understand climate change, 2017

Environment, Society, and Sustainability, Victoria, British Columbia

Paraglacial Landforms, 2014

Introduction to Geomorphology undergraduate class, Victoria, British Columbia

Volume Loss of Saskatchewan Glacier, Alberta, Canada, 2011

Geomorphology undergraduate class, Sackville, New Brunswick

Public Outreach and Webinars

Shelterbelts and You, 2020 (Webinar format)

CropTalks 2020, Prince Albert, Saskatchewan

Added value of fruit and shelterbelt trees in Saskatchewan, 2020

Saskatchewan Vegetable and Fruit Growers Association, Saskatoon, Saskatchewan

Who says money doesn't grow on trees? A progress update of the shelterbelt decision support system, 2020

Agricultural Applied Research Management Public Update, Saskatoon, Saskatchewan

Unlock the potential of your shelterbelt: the economic and sustainable value of shelterbelts, 2019

Western Canadian Agribition, Regina, Saskatchewan

Who says money doesn't grow on trees? The conservation and economic value of shelterbelts, 2019

Conservation Learning Centre, Prince Albert, Saskatchewan

Tree-rings and water: What dendrochronology can tell us about hydroclimate variability, 2017

Geography Colloquium Series, Victoria, British Columbia

TRAINING CERTIFICATIONS AND AWARDS

Training Certifications

Practice of University Teaching Certificate, University of Saskatchewan, *forthcoming*

Received accreditation in the practice of university teaching where I developed creative methods, practical tools, and assessment strategies. Also learned how to develop lesson plans and learning outcomes as well as approaches for accessible and inclusive learning practices.

Using Reason for Conflict Resolution, University of Saskatchewan, 2020

Received accreditation in the practice and techniques of resolving conflict within and outside of the classroom. Focused on the different approaches and strategies used to resolve conflict.

Undergraduate Research Mentorship Training, University of Saskatchewan, 2019

Received certification in the management and mentorship of first-year undergraduate students and how to help them develop research questions. Learning the basic techniques in providing appropriate feedback, redirecting them to resources, and communication techniques.

Speaking Awards

Ineke Dijks Award for Best Overall Graduate Student Presentation, 2018

Western Division of the Canadian Association of Geographers

J.C. Moore Prize in Geography, 2013

Outstanding Speaker Award to Graduating Student, Mount Allison University

Appendix A: Course evaluations and written feedback from courses taught.
Original forms are available upon request.

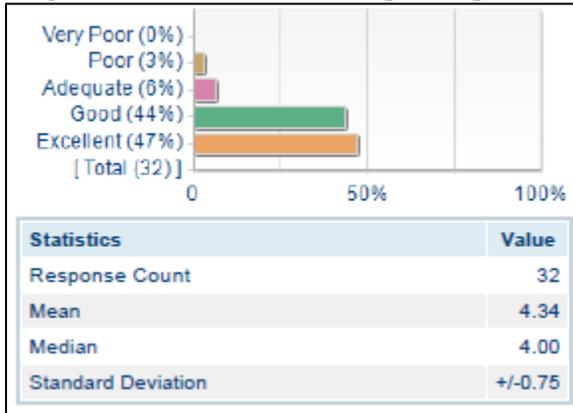


Figure A1: Course Instructor was prepared for course instruction.

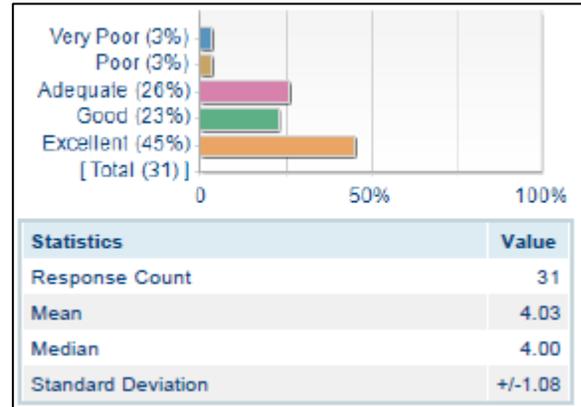


Figure A4: The instructor's explanations of concepts were clear.

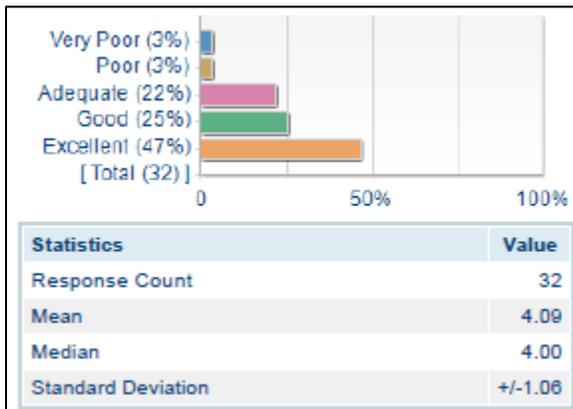


Figure A2: The instructor motivated you to learn in this course.

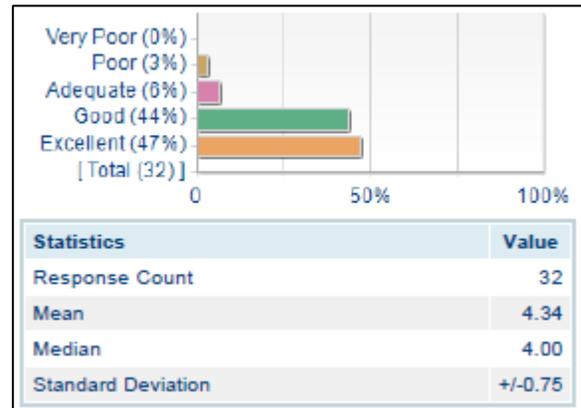


Figure A5: The instructor was available to answer your questions or provide extra assistance as required.

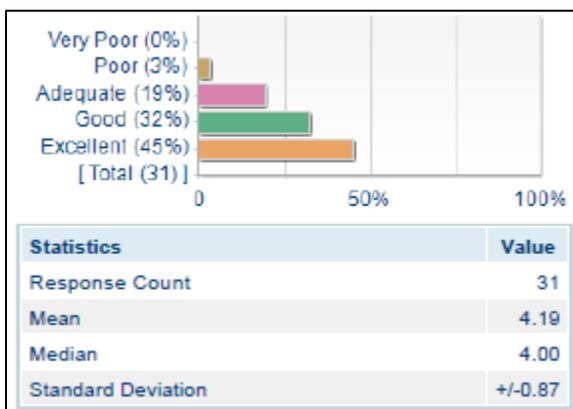


Figure A3: The instructor ensured that your assignments and tests were returned within a reasonable time.

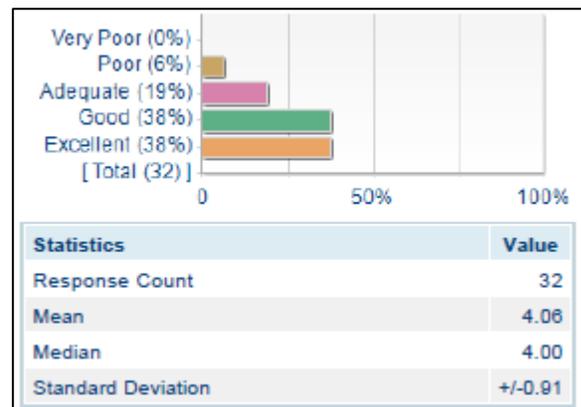


Figure A6: The instructor was helpful in providing feedback to you to improve your learning in this course.

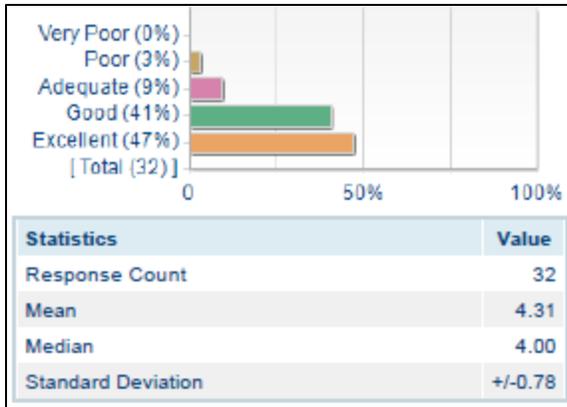


Figure A7: The instructor demonstrated respect for students and their ideas.

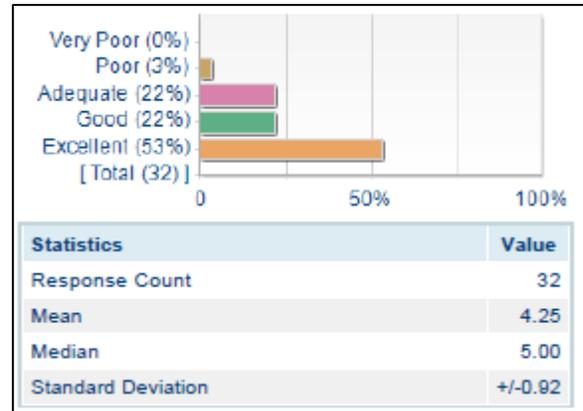


Figure A10: Overall, the instructor was effective in this course.

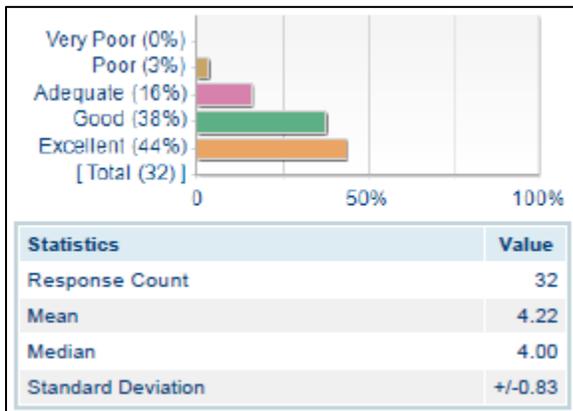


Figure A8: The course structure, goals, and requirements were clear.

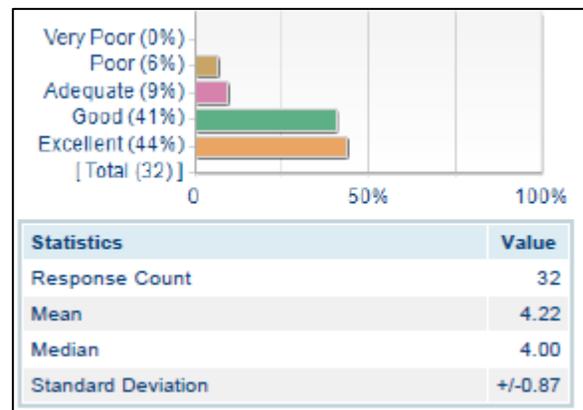


Figure A11: The materials provided for learning the course were clear.

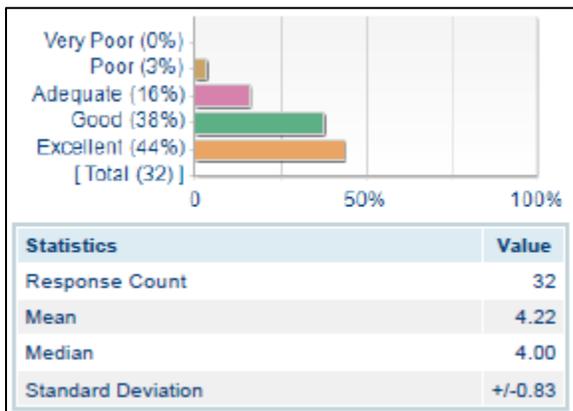


Figure A9: The assigned work help your understanding of the course content.

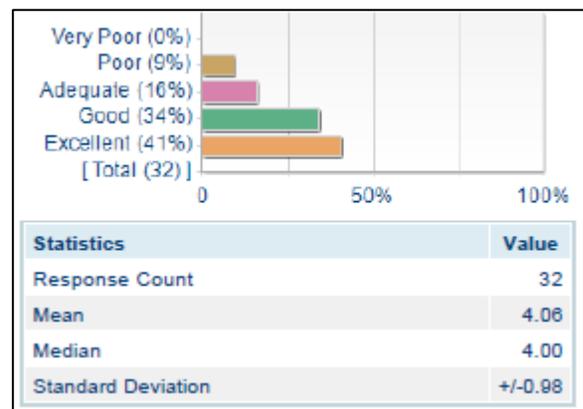


Figure A12: The course provided opportunities for you to become engaged with the course material.

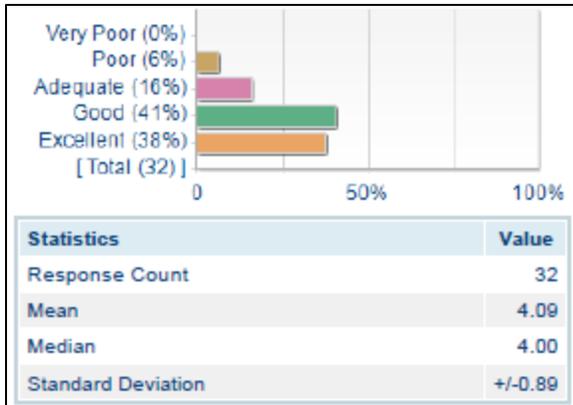


Figure A13: The methods of assessment used to evaluate your learning in the course were fair.

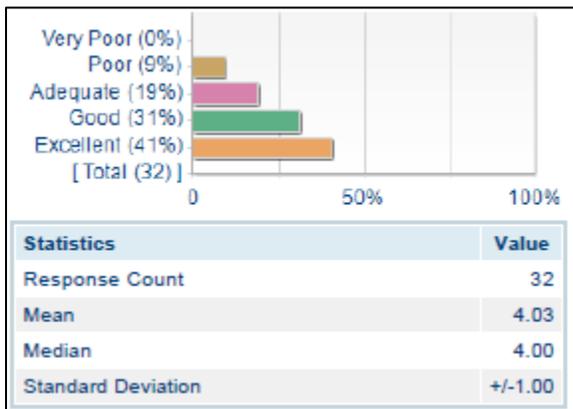


Figure A14: The course provided relevant skills and information.

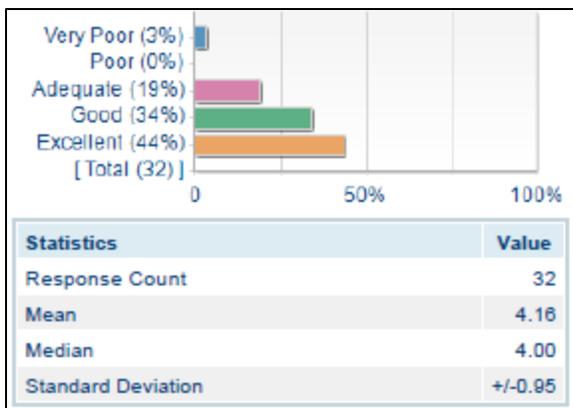


Figure A15: Overall, the course offered an effective learning experience.

Table A1: Responses to “What strengths did your instructor (Bryan Mood) demonstrate that helped you learn in this course?” from Spring 2017 Introduction to Geomorphology. Please note that all written feedback was directly copied from original forms without editing. Original forms are available upon request.

He was organized in his lectures
Enthusiastic to teach, made sure all students understood the concepts, made sure any students falling behind had ample opportunities to succeed
Bryan is the BEST! I loved having a class with him. He's very funny and relatable, I kind of feel like he is my friend even though we have only talked a handful of times. I love his weird sense of humour, pop culture references, and the random videos we watched. He also seemed to really care about our success in the course.
Good at explaining concepts clearly and going into detail about all of the topics
Really helpful and good at answering questions. Also engaging.
Great sense of humor, excellent explanations of various processes
High enthusiasm, excellent subject knowledge, good lecture presentation skills, and great sense of humor.
He was really clear and helpful about the labs, the term paper and the exams. He wanted us to do well, and learn how to write papers well and he provided lots of extra resources to help us succeed in this. Very approachable, if I had any questions I didn't hesitate going to see him.
He had enthusiasm in the various topics covered, he provided bonus work as well as previous midterms to study from.
Bryan Mood was very interested in the course material and did a good job of relating material to places and events.
As I am concentrating in Physical Geography I am a bit biased but I absolutely loved this class. Bryan did a great job in lectures connecting with us and being relatable even though he made a lot of lame jokes. I found the lab correlated really well with lecture material and helped me improve my understanding. I really like the lab handout structure.
Bryan was very motivated which helped make the lectures more enjoyable
Bryan had a great sense of humour and is always making jokes during lectures. That makes things more interesting
Funny, relatable, easy to remember analogies
Lectures were extremely engaging and labs were actually relevant to what we were learning in class! By far my favourite class.
Passionate and knowledge about presented topics. Made an effort to make the class interactive
Was generally quite good at explaining things, and his slides were communicable. I was glad to have field work.
His positive attitude toward the subject made me more interested. Happiness is good.. He seems to always be happy, which is contagious.
Interesting slides, stories and pictures to relate the material
to be honest, i don't like mood's teaching style. every slides he posts is from the text book. and he mostly just read through the slides. a lot of concepts need to be explained more clearly. that really makes me lose interests to go to class because i could just read the text book at home and google the concepts that i don't understand. the lab is always cool but they didn't seem related to the lectures very well. and for

the mid term, there were too many things though me and my friends had no idea what we should focus on. he provided some sample midterms from before, we went over all of them but he barely tested on those. i mean bryan is a good instructor, but it is probably just not a good fit for me.

Mood was a passionate, engaging and extremely effective instructor who made this course enjoyable and a highly valuable learning experience. Mood's obvious passion for geomorphology ignited a strong enthusiasm in most of the class, which created a learning environment which was enjoyable and academically beneficial. Mood showed a real interest in helping his students not succeed in this course but in our future academic endeavors. He was relatable, approachable and always made an effort to make time to for advice, and to get to know his students personally. This high level of engagement with the class as individuals encouraged this class to really make the most out of this course and strive for excellence. Along with the many strengths as instructors, Mood's humour and evident respect for his students as individuals made this class one of the most enjoyable in my university career so far. I would highly recommend Mood teaches this course again for other students to be inspired to pursue geomorphology in the way I personally, and many other of his students, were.

Bryan was always prepared for class, and had a range of materials to keep lecture engaging.

Positive, approachable, informative and entertaining lectures, genuine interest in helping students learning. Overall very inspiring class!!

Loved this course. Found lectures very interesting and helpful, and excellent explanations of concepts and processes in class.

Also really appreciated having a term paper instead of more labs.

Very engaged, kept class interesting and fun to be a part of.

Table A2: Responses to “Please provide specific suggest as to how the instructor (Bryan Mood) could have helped you learn more effectively” from Spring 2017 Introduction to Geomorphology Please note that all written feedback was directly copied from original forms without editing. Original forms are available upon request.

He could have gone slower and emphasized certain parts that were more important
better examples of what will be on the midterm, as well as more direction on what the topic of the paper is to be
Honestly, I think the paper could have been longer/more in depth? 1000 words seemed like it barely brushed the surface.
Maybe a little less content as there was a lot for each lecture and there was a lot to study for
Change a bit of the slides so its not the lecture notes that are just being read out loud. Makes it more engaging.
Slow down on the slides please!
One minor point: lecture slides contained a number of spelling mistakes that should be corrected.
The lecture slides had so much information on them, and he went through them so quickly that I struggled to keep up for most of the semester.
N/A
I would have liked to have a few examples of previous geomorphology papers in order to compare writing styles in geomorphology to other topics.
Better jokes
Lectures were too fast, hard to take notes Almost unnecessary to come to class because everything word for word on slides and hard to keep up with notes in class anyways
Kind of read directly off the slides which wasn't awesome
Bryan races through his slides much too quickly. However I don't think he could avoid that as there seems to be too much content to cover in this course.
Slowed down!! I would write out the lecture slides everyday before class and still not have time to write down what Bryan was saying.
Provide a little more detail on content (such as formations), give specific examples and find ways to make the class more interactive.
A bit more class discussion is always helpful, thought the acoustics in that room are quite bad.
Field trip?
explain in more detail, slow down on important slides, and highlight the testing material.
Classes at times are a little fast paced, besides that there was nothing which I felt could be improved
Provide better worded questions on the tests. There were a large number of students 15 or so) who misread a long answer question(worth 1/3rd of the marks) on the midterm due to poor wording. Bryan did provide an opportunity for make up marks, but only allowed a max. grade of 50% of the long answer marks. I felt this was unfair since it was his poor wording that created the issue. He should have handled the mishap better. Learning for the future!
More detailed lab instructions concerning excell
Slides could be gone through slower and more condensed information, it is impossible to be able to remember the volume of information presented in this course

Table A3: Responses to “Please provide specific suggestions as to how this course could be improved” from Spring 2017 Introduction to Geomorphology. Please note that all written feedback was directly copied from original forms without editing. Original forms available upon request.

I'm not sure if that was just the amount of information we had to get through in the course or if there was anything he could have done about it, but I found it so difficult to keep up. If that is the amount of course material to get through, I think 2 x 1h20 classes would be much better than 2 x 50min.
N/A
The textbook is quite large and gives a ton of information to digest. I found it to be a bit much trying to decipher which information to study.
labs more applicable
Too much content in this course makes it difficult to get through in a semester. I noticed many topics overlapped a bit so maybe there is a way to cut some of the stuff we heard about more than once out....
Less material
Have more detail on each topic (the textbook wasn't required and I had a hard time finding additional information about topics without the textbook).
More videos on concepts.
there are just too many things need to be remembered. and the slides doesn't show which ones are important. it is very hard to memorize everything hey.,
No, I think this course was a very effective learning experience.
The course material is extremely heavy. There was so much material to cove that at the end of each lecture we had gone through slides so fast I wasn't able to retain any information because I was desperately trying to keep up. The material covered should be culled to allow students to explore topics with more depth. This would also provide more room for understanding. As it stands there is so much material to know that a surface level memorization is required to review it all for the exams
The course was fairly basic. The labs were really easy and the class didn't go into as much depth as I was expecting for a second-year course
look at more examples from around the world instead of just the west coast
Change a bit of the slides so its not the lecture notes that are just being read out loud. Makes it more engaging.
More time on specific Aeolian landscapes and Karst landscapes
I thought Bryan gave an excellent course. I don't know how you can improve on that. Well done Bryan.

Appendix B: Evaluations for Teaching Assistantships. All original feedback forms are available upon request.

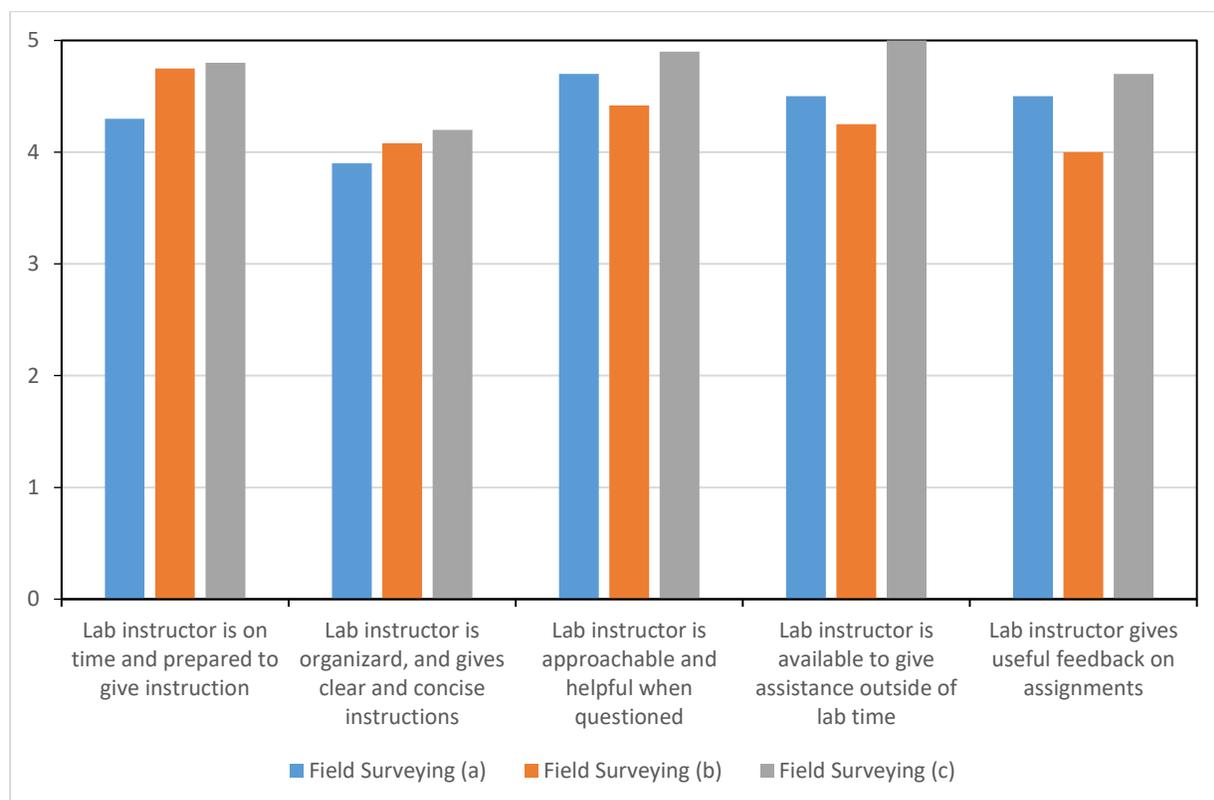


Figure B1: Teaching assessments from “Field Surveying - Winter 2017.” Course evaluation reports were developed by the course instructor and not comparable to other reports. Original forms available upon request.

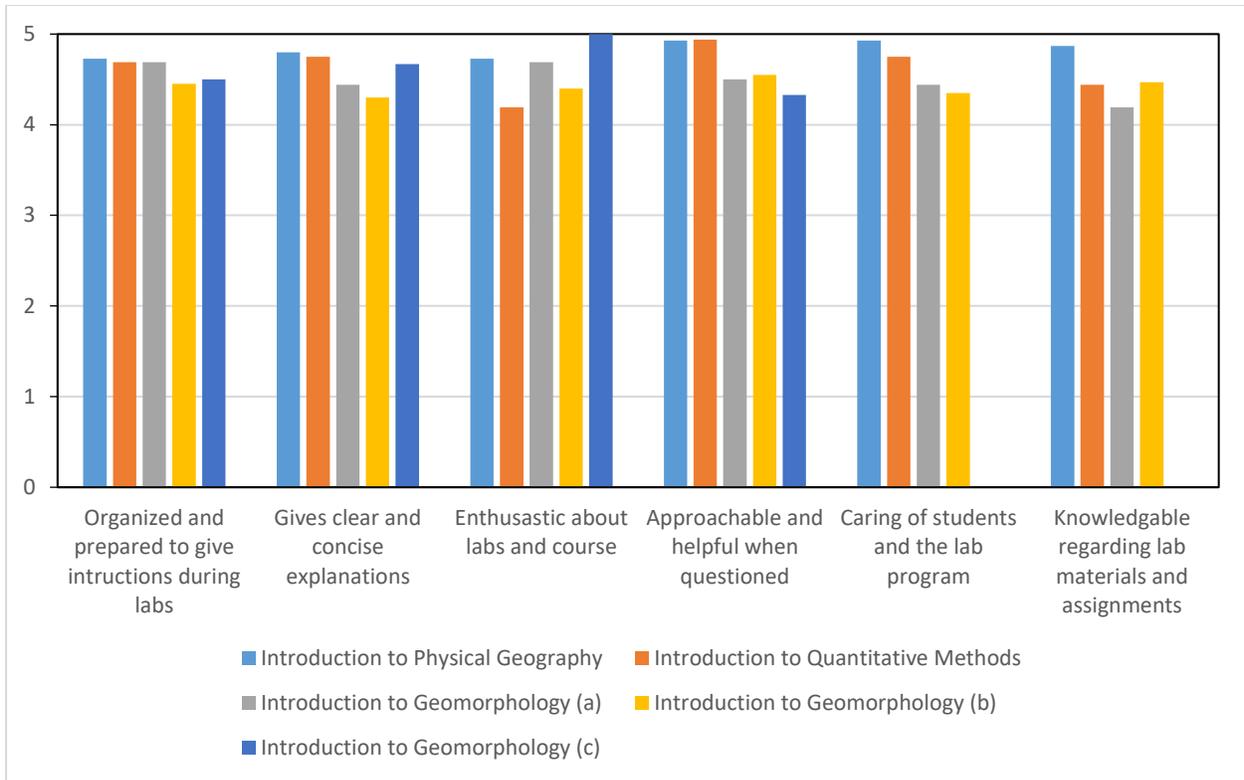


Figure B2: Course evaluation reports for courses taught from September 2013 to Spring 2016 at the University of Victoria. Original forms available upon request.

Table B1: Written feedback from all course evaluations. Please note that all written feedback related to my instruction was directly copied from original forms without editing. Original forms are available upon request.

Brian is very helpful & friendly & seems to know a lot about the subject
Bryan was helpful when approached and always responded to my emails within a short period of time
Bryan Mood is an awesome TA!
Bryan was a great TA! Super helpful and always answered emails quickly and thoroughly
Bryan was great! He made the lab fun to come to. Was engaged in the material and was very helpful. Best lab instructor ive ever had.
Bryan was an exceptional TA, by far the best geography TA I have had so far. He is really comfortable and confident instructing classes and helping students with any questions. I really appreciated all of his help and organization in labs. Despite some of the difficulties that occurred understanding the lab assignment instructions, he was thoughtful explaining criteria and expectations of lab assignments in a way that was thoughtful and clear. Thanks so much. It made all the difference.
This was a great lab and I had a great TA. No further comments.
Brian definitely wasn't prepared for a lot of the labs but was helpful when he knew what was going on.
Lab TA is very helpful and is able to answer all question that are presented to them. Also, they are able to give clear instructions on questions when students get stuck.
Bryan is definitely the best TA. Super chill dude, explained the labs well and was very helpful.
Bryan was awesome, thanks Bryan
Bryan was awesome. A+ gold star.
Bryan is very helpful and approachable/knowledgeable + encouraging – a very positive working environment and overall lab experience.
Bryan is nice.
Bryan was really helpful + would always explain labs well. Funny + approachable.
Bryan was very helpful and clear, and I wouldn't be doing nearly as well or feel as confident without his help.
Bryan made the labs entertaining as possible which is difficult for a stats lab. He was prepared and almost always very helpfull and approachable when questioned. Although he was very busy and could not get to students questions quickly. He sometimes seemed like he needed help or a smaller class size.
Lab instructor didn't really help explain clearly what to do for the labs.
Bryan is Gucci.
May need more instruction during field study.
Fun TA
Bryan is helpful and nice
Everything is pretty Gucci about Bryan, and the lab. Everything was clear and went well with the course.
Great teacher made class enjoyable. Would take class just for Bryan.
Bryan was a great lab instructor.

Diagrams were sometimes unclear/messy or were erased to quickly rendering them useless.
One of the best TAs I have ever had. Great teaching and answering questions.
Instructions could have been more clear when collecting data for the lab lab. We were a a little lost.
There were a few times that there was some miscommunication and we were told to do something that was incorrect. Over a good TA though 😊_
Sometimes initial descriptions were simplified/glossed over but further questions helped.
Gives great life advice. He has a sunny outlook on life
Bryan needs to show more maturity, respect, and professionalism. He was not helpful over email, and not very helpful during the lab. He needs to know the material more.
Bryan, you are Gucci mane.
Best lab TA I have ever had! Made coming to the lab every week enjoyable even in the rain.
Great guy and instructor.
BJ was awesome. Fun and was like-minded, had lots of jokes and was laid back. Explained in great detail during pre-lab.
Bryan was an awesome T.A. 😊
The one time opportunity to hand in a lab late without penalty was hugely helpful. Brian was also enthusiastic and encouraging during lab sessions and was one of the better lab instructors I've had during my three years at UVic.
Bryan is a great T.A.
Writing was really hard (sometimes impossible) to read when he wrote feedback on the labs.

Appendix C: Example Syllabus

University of Saskatchewan
Environmental Science – EVSC 110.3
Renewable Resources and Environment
Fall 2020 – Code: 82236.202009

SYLLABUS

Instructor: Dr. Bryan Mood

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Office Hours: Tuesdays and Thursdays 11:30am – 12:30pm CST (UTC/GMT -6hrs)

Website: <https://canvas.usask.ca/courses/2863>

Course Delivery: Asynchronous

Course Objectives and Overview

Global demand for energy and food will inexorably rise during the next century as the global populations rise. Meeting this demand while simultaneously lessening the impact of energy and food production systems on the earth will be one of the central goals of human society. Renewable resources are believed by many forecasters to be a key contributor to meet these demands but they will only achieve this potential if they are soundly managed. Sound management requires that we thoroughly understand sustainable use of renewable resources and that we have the necessary skills to use these resources to achieve our goals.

This course will introduce students to renewable resources and their management in the context of global demand for energy, food, and fibre over the next century. The emphasis will be on sustainable use of land, plant, surface water, and groundwater resources. The role of renewable resources as alternative energy sources and the interaction between human use of the resource and their environment, as well as global climate change will be addressed.

Land Acknowledgement

As we engage in Remote Teaching and Learning, I would like to acknowledge that the Saskatoon campus of the University of Saskatchewan is on **Treaty Six Territory** and the **Homeland of the Métis**. We pay our respect to the First Nation and Métis ancestors of this place and reaffirm our relationship with one another. I would also like to recognize that some may be attending this course from other traditional Indigenous lands. I ask that you take a moment to make your own Land Acknowledgement to the peoples of those lands. In doing so, we are actively participating in reconciliation as we navigate our time in this course, learning and supporting each other.

Instructor Bio

Hello! I'm Bryan Mood, a post-doctoral researcher at the University of Saskatchewan. Although I grew up in Nova Scotia, I've also lived in British Columbia and New Brunswick, and am now settled in Saskatchewan. By training, I am an environmental scientist and use trees to help describe how ecosystems have responded to the environment in the past and may in the future. Right now, I'm working with rural landowners to understand the value of their trees (shelterbelts) on their properties. Some of my hobbies include running with my dog, hiking with my dog, baking with my dog, napping with my dog, and playing soccer (without my dog – he gets too many red cards). Want to see pictures of my dog? I have lots.



Remote Learning Context

We should acknowledge the complex circumstances in which this course is taking place. Remote learning and teaching are new to most of us – including myself – and as a result we should act with care and empathy towards one another. I recognize that many in this course will have diverse issues with remote learning whether it be from family, internet connections, mental health, work, or any other number of things. That is okay. Hopefully, I have designed the course in such a way that you feel able to complete it to the best of your abilities despite the many distractions of our situation. Feel free to talk to me about any issues you are having or if you need extra time on any assignment.

As a way to normalize requesting help, all students will have a 1-week extension on any assignment of their choosing. Just send me (Bryan Mood) an email. No explanations are needed with the 1-week extension or further requests.

Course Learning Outcomes

The lecture portion of this course will focus on key knowledge needed in renewable resource management and tutorials. Upon completion of this course students will have sufficient knowledge to:

1. Distinguish between renewable and non-renewable resources, and their impacts on the environment;
2. Recognize the interconnectedness of humans and the environment across energy systems;
3. Describe and give examples of climate change impacts in Saskatchewan;
4. Critically evaluate the role renewable resources plays in a sustainable future.

Self-directed laboratory tutorials have been developed to supplement course materials and create basic skills required in renewable resource management science. Complementing the course, all students will participate in the First Year Research Experience (FYRE) to develop research skills to:

1. Demonstrate written and oral communication skills in science;
2. Review and critique research articles and their conclusions;
3. Apply basic numeracy and develop simple models using spreadsheets;
4. Graph and report the above skills into a poster presentation.

Course Schedule:

Week	Week of	Topic	Module No.	
1	Sept 3	Introduction	1	Pre-Determined Topics
2	Sept 7	Energy Systems	2	
3	Sept 14	Lithosphere/Atmosphere	3	
4	Sept 21	Hydrosphere/Biosphere	4	
5	Sept 28	The Carbon Cycle	5	
6	Oct 5	Climate Change	6	
7	Oct 12	Sustainable Water 1	7	Student Chosen Topics
8	Oct 19	Sustainable Water 2	8	
9	Oct 26	Sustainable Agriculture	9	
10	Nov 2	Your Environmental Footprint	10	
11	Nov 9	READING WEEK		
12	Nov 16	Environmental Racism	11	
13	Nov 23	Examples of Sustainability around the Globe	12	
14	Nov 30	Saskatchewan's Renewable Resources and Potential	13	

Grading Scheme

All materials must be completed to receive a passing grade in this course.

	Item	Value	Total
Weekly Assessments		2.5% each (13* total)	30%
Laboratory Assignments		5% each (6* total)	25%
FYRE Project	Research Question	3%	25%
	Abstract	5%	
	Final 'Component'	17%	
Environmental Paper			20%
BONUS	*Community Betterment*		3% ADDED

*- Lowest mark will be removed.

Evaluation Components

Weekly Assessments

- **Value:** 30% of final grade (2.5% each; 13 total; lowest mark removed)
- **Due date:** Every Saturday at 11:59PM CST (-6UTC)
- **Type:** Used to assess competency of weekly materials through multiple choice, open-ended questions, and discussion boards. Students should develop and use their critical thinking skills and knowledge from the week's module to answer the questions effectively.

Laboratory Assignments

- **Value:** 25% of final grade (5% each; 6 total; lowest mark removed)
- **Due date:** Two Saturdays following assignment of the materials.
- **Type:** Used to get you thinking and learning about renewable resources, sustainability, climate change, and the environment through different modes. You will go outside to collect information, use internet-based tools, and more to learn about Saskatchewan's environment.

FYRE Project

1. Research Question

- **Value:** 3% of final grade
- **Due Date:** September 25th 2020 at 11:59PM CST (-6UTC)
- **Type:** You will pose a research question for FYRE that answers something of their interest. The research question should be obtainable, legible, and explicit.

2. Abstract

- **Value:** 5% of final grade
- **Due Date:** October 16th 2020 at 11:59PM CST (-6UTC)
- **Type:** You will write a short description of your research topic in approximately 250 words to illustrate background information knowledge and what you hope to accomplish. The abstract should also contain a short bibliography of resources you plan on using for your final component.

3. Final 'Component'

- **Value:** 17% of final grade
- **Due Date:** November 20th 2020 at 11:59PM CST (-6UTC)
- **Type:** You will disseminate the answer to your research question through outreach. This can be done by using social media (e.g., Twitter, Instagram, or Facebook) or other ways of your choosing (e.g., sending the information to concerned parties).

Environmental Paper

- **Value:** 25% of final grade
- **Due Date:** December 4th 2020 at 11:59PM CST (-6UTC)
- **Type:** You will write a short (1000 word) paper on an environmental subject of your choosing that critically describes how poses challenges (or not) to climate change,

sustainability, or renewable resources. You should try to choose a topic that is close to you personally!

BONUS

- **Value:** 3% addition
- **Due Date:** December 8th 2020 at 11:59PM CST (-6UTC)
- **Type:** Do something that enriches your community in a sustainable or environmentally-friendly way! This can be donating to the food bank, donating clothes, picking up garbage on the sidewalk for an hour, or a number of other things! If you think it enriches your community – do it!

Submitting Assignments

All assignments will be submitted through CANVAS at <https://canvas.usask.ca/courses/2863> unless otherwise specified.

Late Assignments

1. There will be a 25% grade deduction if an assignment is late (e.g., submitted after the due date).
2. An additional 25% penalty is applied if an assignment is more than 24 hours late
3. If an assignment is more than 48 hours late, it is worth 0%.

For the purposes of this policy, a weekend is equivalent to a 24-hour period, including a long weekend. However, **all students are guaranteed at least one 1-week extension on any assignment of their choosing.** No reason needs to be given. To receive the extension, email the instructor to confirm. You **MUST** email the instructor prior to the due date.

Academic Honesty

The Academic Honesty and Dishonesty policies of the University of Saskatchewan apply in this course (and in all your other courses). A handout is available on the PAWS site, and students should ensure that they are familiar with the contents of this handout.

Use of Video Recordings

Video conference sessions in this course will be recorded and made available only to students in the course for viewing via Canvas. This will provide you the opportunity to review any material discussed.

Please remember that course recordings belong to your instructor, the University, and/or others (like a guest lecturer) depending on the circumstance of each session, and are protected by copyright. Do not download, copy, or share recordings without the explicit permission of the instructor.

For questions about recording and use of sessions in which you have participated, including any concerns related to your privacy, please contact your instructor. More information on class recordings can be found in the Academic Courses

Policy <https://policies.usask.ca/policies/academic-affairs/academic-courses.php#5ClassRecordings>

Student Supports

Academic Help for Students

The University Library offers a range of learning and academic support to assist USask undergrad and graduate students. For information on specific services, please see the Learning page on the Library web site <https://library.usask.ca/support/learning.php>.

Remote learning support information <https://students.usask.ca/study/remote-learning.php>

Remote learning tutorial https://libguides.usask.ca/remote_learning

Study skills materials for online learning <https://libguides.usask.ca/studyskills>

A guide on netiquette, principles to guide respectful online learning interactions

<https://teaching.usask.ca/remote-teaching/netiquette.php>

Teaching, Learning and Student Experience

Teaching, Learning and Student Experience (TLSE) provides developmental and support services and programs to students and the university community. For more information, see the students' web site <http://students.usask.ca>.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central

(<https://students.usask.ca/student-central.php>).

Aboriginal Students' Centre

The Aboriginal Students' Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, bringing Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (<https://www.facebook.com/aboriginalstudentscentre/>) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success and facilitates international education experiences at USask and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students in their transition to the University of Saskatchewan and to life in Canada. ISSAC offers advising

and support on matters that affect international students and their families and on matters related to studying abroad as University of Saskatchewan students. Please visit students.usask.ca or updates.usask.ca for more information.

Recommended Technology for Remote Learning

Students are reminded of the importance of having the appropriate technology for remote learning. The list of recommendations can be found at <https://students.usask.ca/remote-learning/tech-requirements.php>.

Appendix D: Example Term Assignment

GEOG 276: Geomorphology Term Paper and Abstract Instructions

This assignment is intended to provide students with the opportunity to pursue a subject of interest to them with a geomorphic perspective.

- **Pick a location and/or feature of interest to you in Canada or the World.** A good idea is to pick a topic where you grew up or have a sense of connection to.
- **Use the library** to learn about your subject topic. Are there journal articles on the particular feature you have chosen? At the place you have chosen?

The learning outcome of this assignment is for you (the student) to recognize and articulate the value of geomorphology in an area of interest to you by the end of the term.

Term Paper Part One: The Abstract (5% of final grade)

DUE DATE: Friday February 10th, 2017 at 4:00PM/1600hrs

The first part of the assignment will require students to write a **200 – 250-word abstract** about their topic. An abstract is intended to be a short summary of the content that your paper will include. It should highlight what you intend on accomplishing and briefly outlining what your paper will discuss and describe. You should tell the reader what you hope to accomplish, demonstrate, and conclude, and where it was done. References are not cited in an abstract but you should provide at least **three (3) supplementary references** that you plan on using for your term paper. References should be primary (e.g., research articles, textbooks, or technical/governmental reports) and avoid non-academic sources (e.g., newspapers and Wikipedia).

This assignment will ensure that students are on the right track with their term paper and have started thinking about a topic early in the term. Feedback will be provided which will help to enhance the final term paper.

Term Paper Part Two: The Paper (20% of final grade)

DUE DATE: Friday March 24th, 2017 at 4:00PM/1600hrs

The second part of the assignment will involve writing a **1000-word essay (excluding references and the title page)** about the geomorphic subject that you have chosen. The paper will have an introduction, study site/area description, discussion, and conclusion followed by references. **The minimum primary references requirement is five (5) but more are required to receive full marks.** When writing your essay, it should have a focus on geomorphology but the discussion should both focus on its evolution as well as its impacts on other subjects in geography. Again, the point of this essay is for you to explore something that fascinates you but with a geomorphic perspective. Think of something that interests you and determine how you can bring geomorphology into it.

The essay is required to be formatted with the following specifications:

- Font: Times New Roman; size: 12 pt.
- Title of sections in **Bold**.
- 1-inch margins.
- Double spacing.
- 1000-word count excluding title page and references (± 75 words are acceptable).

- Bibliography/references should maintain a consistent format of your choice.

Geomorphology Writing

A good geomorphology paper informs the reader of the geographical character of the site, and then offers one or more interpretations to explain their geomorphological relationships and modes of formation. These observations are distinctly separated from the interpretations, so that the reader can judge whether the interpretations are well-substantiated and follow logically from the recorded data. The author has an obligation to present the data clearly and as completely as possible, and to establish the interpretations in a manner that permits the reader to follow the author's train of reasoning throughout. This style of writing differs somewhat from that required in other fields. Writing styles which are appropriate for the analysis of English Literature, inter-office memos or personal letters are not suitable to formal discussion in geomorphology. Subtle differences are present between good geomorphological writing and those appropriate for chemistry, physics and other sciences. Consult a technical journal, such as the *Geomorphology*, for examples of geomorphological writing.

Writing Problems

Some writing problems are peculiar to geomorphological writing. The more common of these are discussed below.

1. **Referencing:** All ideas taken from other researchers or published works must be referenced. Failure to do this constitutes plagiarism. It is not necessary, however, to re-state ideas published by previous researchers in detail. Citations after the essential point should serve to direct the reader to the original reference, where the ideas are (hopefully) fully discussed.

Examples:

- i. *Basal melt-out tills may have specific pebble fabrics oriented parallel to ice flow (Shaw 1982).* Here, a specific point is credited to the researcher who proposed or stated it.
 - ii. *The unit possesses the characteristics of a rain-out diamicton, as defined by Domack and Lawson (1985).* It is unnecessary to list the characteristics used to define rain-out diamictons by Domack and Lawson. The unit has been described previously, and the reader can check the description against the criteria proposed by Domack and Lawson.
2. **Quotations:** Quotations should be used sparingly in geomorphological writing. It is generally preferable to re-write the sentence to express the ideas of the original author (with proper citation, of course). Quotations are generally used in geomorphological work when a historical point is being cited, or when an author wishes to leave no ambiguity about the words of another.
 - a. A short quotation (one sentence or less) should always be incorporated into the text and the page number should always be specified. For example: *Current practice is to define a facies model as "a general summary of specific sedimentary environment" (Walker and Cant 1984:5).*

b. Longer quotations should be set apart from the text (and single-spaced where the text is double-spaced). The three dots (...) are used to indicate that part of the original text has not been cited.

Just as there can never be any absolute classification of depositional environments, so there will be differing numbers and types of facies models. As very large scale systems are studied in more detail, models for sub-components of the system may emerge... However, it is usually probably safer at the moment to emphasize and develop the generally existing models Walker and Cant (1984:7).

3. **Definitions:** Geomorphology has a wealth of technical terms, many of which have been used in different senses by different authors. Agreement on the meaning of these technical words between the author and the reader is essential for communication. Many of the technical terms used in geomorphology are defined in dictionaries and textbooks. These definitions are those which are generally accepted among geomorphologists. If necessary, other terms can be defined by citing the work in which the definition first appeared.
4. **Time Words:** Geomorphological interpretation is commonly concerned with the timing of events. The importance of time in geomorphology means that rigorous standards must be applied to the use of words with time connections. Such words must be used only when time is involved.

Incorrect	Correct
Sand lenses are <i>occasionally</i> present Diamicton <i>immediately</i> overlies silt The contact is <i>sudden</i>	Sand lenses are <i>commonly</i> present Diamicton <i>directly</i> overlies silt The contact is <i>abrupt</i>

5. **Tense:** Descriptions may be written in the present tense, because the sediments or landforms currently exist. Depositional events, however, should be described in the past tense.
Example: *Unit 26 is a massive, poorly sorted silt. This unit is interpreted as a low-energy lacustrine deposit. The unit was deposited by settling from low viscosity turbidity currents.*
6. **Qualifiers:** The uncertainty involved in geomorphological interpretation demands the use of qualifiers, such as "probably", "generally", "possibly", and "usually". Definition interpretations cannot be proposed for many landforms. Interpretations which are tentative must be clearly labelled as such.
7. **Spelling:** Canadians cannot decide whether to use American or British spellings for many words. In the absence of a specific directive, it is best to be consistent and use 'British' spelling – and never mix the American and British systems.

American	British
analyze	analyse
center	centre
color	colour
meter	metre

8. **Abstract:** The abstract is intended to be a short summary (200 to 250 words) of the contents of your paper or report. It must be completely independent of the remainder of the report. The abstract should be written with the assumption that the remainder of the report is unavailable to the reader.

The abstract should tell the reader what was accomplished, demonstrated, and concluded, and where it was done. The more involved questions of how? And why? Should be left to the main body of the report. Consequently, the report must not be referred to in the abstract. References must not be cited in the abstract.

Common Problems Involved in Geomorphological Writing

The following examples illustrate some common problems involved in geomorphological writing.

Example 1: Continuous throughout the exposure, the unit remains undeformed.(1) The uppermost part has been removed by mechanical means, prior to this study.(2) The lower contact is sudden(3), undulated occasionally(4), and non-continuous.(5) This undulation increases as one goes(6) a little to the west.(7) "Maximum pebble size ranges from 3 to 5 cm.(8) Pebble lithology was undertaken by breaking pebbles and visual observation(9); this procedure enabled placement into different classes.(10) It should be noted that (11) the calcite to dolomite ratio suggests that the tills are of the same glacier.(12) However, (13) one equally viable alternative (14) explanation could be that the glacier passed over the same area, obtaining the same lithology. (15) This objective explanation (16) appears to be the most plausible."

- 1) This sentence is grammatically incorrect. The phrase "*remains undeformed*" suggest two or more geomorphological events, which is not the intent of the author. The sentence could be written as: "*The unit is undeformed throughout the exposure*".
- 2) Rewrite as: "*The unit has been artificially truncated*".
- 3) This is a time word. Use "*abrupt*".
- 4) This grammatically incorrect. Use "*undulates locally*".
- 5) This is confusing, as a contact cannot be "*non-continuous*". The reader is uncertain whether: a) the overlying unit is discontinuous; b) the underlying units are not the same along the length of the contact; or c) the contact changes character along its extent.
- 6) Avoid this construction.
- 7) This is a colloquialism. The distance should be specified, or the location of the observations given. This sentence could be re-written as: "*The lower contact is more undulatory in the western part of the exposure than in the eastern section*".
- 8) A maximum cannot have a range. Re-write as: "*The maximum dimension noted was 15 cm*".
- 9) "*Visual observation*" is a redundancy.
- 10) The syntax of the sentence is incorrect. Re-write as: "*The pebble assemblage was subdivided visually into lithologic classes*".
- 11) Constructions such as "*It should be noted that*", "*it is of importance that*", "*The nature of sedimentary structures indicates that*", and "*The author would like to suggest*" can

always be omitted. Tell the reader what should be noted, what is indicated by the structures, or what interpretation is proposed directly, without preamble.

- 12) This sentence shows poor syntax, and dubious logic. It could be re-written as: "*The similarity of the calcite:dolomite ratios of the two tills suggest that the units were deposited by the same glacier*". The readers can now understand the sentence, although they may not agree with the conclusion.
- 13) Some writers consider that to begin a sentence with words such as "however", "because", or "but" is bad practice, but this is not universally accepted.
- 14) "Viable alternative" is redundant. Use "One equally valid explanation..." or "An alternative explanation...".
- 15) Re-write as "*An alternative explanation is that the similarity in lithology between the units reflects the same provenances*".
- 16) All explanations in geomorphology should be objective (i.e., based on tangible observations).

Example 2:

Frequently researchers begin with an erroneous assumption, and then use this assumption to interpret other data. The interpretation is then used to support the initial assumption. The investigator often is essentially assuming what they are trying to prove. This highly improper technique is referred to as "circular logic."

"Suppose that lodgment till could be correlated entirely on the basis of silt content. That would suggest that all the lodgment till units exposed in the Victoria area were part of the same stratigraphic unit. Some other investigators have correlated silty lodgment tills to sand lodgment tills. These geomorphologists must be wrong, because silt content is the only valid correlative tool for diamictons."

This fallacy is fairly easy to detect, because the assumption: a) is stated in a straight forward manner; and, b) is contrary to common geomorphological sense. If the assumptions are hidden, or less obviously incorrect, then circular logic may be harder to recognize and correct.

Example 3:

Some authors tend to adopt a writing style designed to impress their audience with words and phrases which look and sound "scientific." This technique is especially prevalent in consultants' reports. When carried to extremes, the result is unreadable and frequently meaningless verbose prose.

"Based on the analysed data in conjunction with previously reported interpretations, some variables of glacial geomorphology can be tentatively hypothesized at this time. The lower diamicton lithofacies at the two test investigation localities are believed to be a glacial till, with the implications from this identification. The upper diamicton is interpreted as a till facies synthesized through a penecontemporaneous drumlinization of quasi-deformed basal diamicton. Utilizing the interfacial relationship between the diamicton bodies, a stabilized negative pressure environment between the basal component of the superimposed glacial ice mass and the substratum constituent of the integrated system can be inferred. Such environmental parameters, *in toto* or partially, were probably the progenitors."

This paragraph illustrates many of the devices of "pseudoscientific gobbledegook," including:

- circumlocution: "*test investigation localities*" instead of sites; "*synthesised through penecomtemporaneous drumlinization of quasi-deformed basal diamicton*" instead of deposited during deformation.
- use of vague, non-specific statements: "*implications following from this identification.*"
- use of "fashionable" or "buzzwords": "*interfacial relationship.*"
- unnecessary use of complex words where common words will serve: "*utilizing*" instead of using.
- unnecessary use of foreign words: "in toto."
- invention of "new" words: "*drumlinization*", "*quasi-deformed.*"

General guidelines on references, including electronic references (Canadian Journal of Earth Sciences)

Journal article:

Kovanen, D.J., and Slaymaker, O. 2003. Lake Terrell upland glacial resurgences and implications for late-glacial history, northwestern Washington State, U.S.A. *Canadian Journal of Earth Sciences*, 40: 1767–1772.

Journal article available online only (with URL):

van der Sanden, J.J., and Hoekman, D.H. 2005. Review of relationships between grey-tone co-occurrence, semivariance, and autocorrelation based image texture analysis approaches [online]. *Canadian Journal of Remote Sensing*, 31: 207–213. Available from <http://pubs.casi.ca/doi/abs/10.5589%2Fm05-008> [accessed 9 September 2005].

Journal article available online only (with DOI):

van der Sanden, J.J., and Hoekman, D.H. 2005. Review of relationships between grey-tone co-occurrence, semivariance, and autocorrelation based image texture analysis approaches [online]. *Canadian Journal of Remote Sensing*, 31: 207–213. doi:10.1139/rs03-011.

Report:

Sanders, W.W., Jr., and Elleby, H.A. 1970. Distribution of wheel loads in highway bridges. National Cooperative Highway Research Program Report 83, Transportation Research Board, National Research Council, Washington, D.C.

Book:

Williams, R.A. 1987. *Communication systems analysis and design*. Prentice-Hall, Inc., Englewood Cliffs, N.J.

Part of book:

Healey, M.C. 1980. The ecology of juvenile salmon in Georgia Strait, British Columbia. In *Salmonid ecosystems of the North Pacific*. Edited by W.J. McNeil and D.C. Himsworth. Oregon State University Press, Corvallis, Oreg. pp. 203–229.

Paper in conference proceedings:

Whittaker, A.A., Uang, C.-M., and Bertero, V.F. 1990. Experimental seismic response of steel dual systems. In Proceedings of the 4th U.S. National Conference on Earthquake Engineering, Palm Springs, Calif., Vol. 2, pp. 655–664.

Institutional publications and pamphlets:

Dzikowski, P.A., Kirby, G., Read, G., and Richards, W.G. 1984. The climate for agriculture in Atlantic Canada. Available from the Atlantic Advisory Committee on Agrometeorology, Halifax, N.S. Publ. ACA 84-2-500. Agdex No. 070.

Corporate author:

American Public Health Association, American Water Works Association, and Water Pollution Control Federation. 1975. Standard methods for the examination of water and wastewater. 14th ed. American Public Health Association, American Water Works Association, and Water Pollution Control Federation, Washington, D.C.

Thesis:

Keller, C.P. 1987. The role of polysaccharidases in acid wall loosening of epidermal tissue from young *Phaseolus vulgaris* L. hypocotyls. M.Sc. thesis, Department of Botany, The University of British Columbia, Vancouver, B.C.

Electronic citation:

Quinion, M.B. 1998. Citing online sources: advice on online citation formats [online]: Available from <http://clever.net/quinion/words/citation.html> [cited 20 October 1998].

Citation including URL:

Tremblay, R. 1998. Development of design spectra for long-duration ground motions from Cascadia subduction earthquakes. Canadian Journal of Civil Engineering, 25: 1078–1090. Available from <http://nrcresearchpress.com/doi/abs/10.1139/I98-028> [accessed 20 October 2005].

Citation including DOI:

Tremblay, R. 1998. Development of design spectra for long-duration ground motions from Cascadia subduction earthquakes. Canadian Journal of Civil Engineering, 25: 1078–1090. doi:10.1139/L04-079.