BRIERCREST

GEOG 100 ONL – Physical Geography of Canada I: Earth Science
Course Instructor: **Bruce Martin, Ph.D.**
Email: **bmartin@briercrest.ca**

Class Location:
www.rossway.net/bcrest100/
Class Time: N/A
Course Dates: **September-December 2026**

3 Credit Hours

Course Description

This course is an introduction to geomorphology, the scientific study of the landscape and landscape formation processes. In the course, students will be introduced to the physical structure of the earth, earth materials, the nature and formation of major landform features on the earth's surface, and the processes that continue to shape the landscape such as rivers, oceans, glaciers, winds, earthquakes, volcanoes, and tsunamis.

The course is beneficial for students interested in disciplines which consider the natural environment (such as agriculture, ecology, or environmental sciences), fields which deal with human/environment interaction (such as education, social sciences, history, anthropology or architecture), and relief and development.

Geography 100 is complementary to Geography 101 (Weather, Climate, and Ecosystems). Neither course has any prerequisites.

Text

Christopherson, R.W., Birkeland, G.H., Byrne, M-L., and Giles, P.T. ***Geosystems: An Introduction to Physical Geography, 4th (or 3rd) Canadian Edition.*** Toronto: Pearson. ISBN 9780134854052.

This is now only available digitally (although there may be resale paper copies available). Once you have purchased the e-Book (good for 24 months), you can choose to purchase a paper copy for an extra fee. If you took GEO 101 last semester, you should still have access. ***Contact Pearson directly with any textbook issues.***

To get the text, follow the instructions

- at www.rossway.net/bcrest100/
- OR in the "Welcome" section on the course Canvas page.

This is also the text for GEOG 101 in alternate years. If you take (or have taken) GEOG 101 you do not have to buy another text.

Students are responsible for course materials and communication on Canvas (https://briercrest.instructure.com) and their myBriercrest.ca email account.

Learning Objectives

At the successful completion of this course the student should have:

- A basic understanding of the physical processes and dynamics that have shaped, and continue to influence, the landscape;
- An awareness of basic techniques and skills used in earth & atmospheric sciences;
- An enhanced appreciation of the complex interaction of processes and systems active in the natural environment;
- An introduction to the discipline of geography (earth & atmospheric sciences) and their relevance to a variety of fields of study;
- A basic understanding of Christian perspectives on the natural sciences.

Course Requirements and Weighting

This course is Online. Most students respond very positively – they can work on their own time and in their own way. But it does require a different approach to learning! You will have the privilege (or challenge, depending how you look at it!) to be more self-directed in your learning! There are several implications of which you need to be aware as you commit to the course:

Practical Implications:

- You will still need to follow along from the course homepage: www.rossway.net/bcrest100/
- The workload for this course is equivalent to any other 3 credit hour class offered on campus – approximately 2 hours of reading (textbook) and study for each 1 hour of lecture (online notes).
- You will need to be diligent reading the course notes and text; these are the chief sources of information.
- Internet access is absolutely essential as a source of information (the lectures are all online), to chat with the instructor about course content and assignments, to chat with other students, and to access other websites with information relevant to the course.
- You will need to complete assignments on time in order that they may be forwarded to the instructor.
- If you are on campus, you are encouraged to organize a "Study Group" which will meet weekly, in order to work on labs and help one another understand difficult concepts. The online discussion group provides a forum for dialogue among both on- and off-campus students.

Personal Implications:

- You will need to be self-directed and self-motivated to complete the course requirements.
- You will need to be disciplined to complete the assignments on time.
- The Study Groups will only be as helpful and productive as you choose to make them. Study Groups can be one of the most effective – and enjoyable – methods of learning.
- You will not need to spend as much time in class as a traditional course … but more time in personal study.
- You may be able to complete the requirements for the course (except for the exams), early!
- You will have the opportunity to direct your own learning times and styles.
- You will learn some invaluable skills and discipline in time management and self-directed learning.

SPECIFIC COURSE REQUIREMENTS:

1. Reading Assignments (5%) There will be regular reading assignments from the course notes and text, as indicated in the calendar. You will be asked, as part of every lab, to indicate whether you have or have not done the readings. Because this will be the chief source of information in the course, reading is essential.

2. Labs (25%) Laboratory exercises are on the website. All the materials you require for labs – topographic maps, etc. – are available in the Library. Ask one of the library staff if you require assistance. You are encouraged to work on your labs in partners or in groups. Often it is helpful to interact with other students – great! However, you must hand in your own lab (remember, your partner[s] may not be correct, anyway).

Labs are "Quizzes" on Canvas. You will have to do each lab in one sitting as there is no way to allow a restart. Allow 2-3 hours per lab. You will need your online notes and your textbook to be successful. Yes, these are open book.

3. Mid-term examination (31%). **Friday, October 16, 1-2:30 p.m.** The exam will be ONLINE on Canvas. The exam will be monitored using Zoom.

The mid-term exam will be based on lecture material and readings covered in the first half of the term. It will be based on Chapters 1, 12-15 (4CE) or 11-14 (3CE) of *Geosystems* and online notes.

4. Participation in a moderated discussion group (8%). Over the term you will be expected to join in an online discussion with your classmates on Canvas. You are responsible to make one entry per week. I will post suggested topics. Or you can create your own. There is no set time you have to be online. Rather, interact with other posted comments or post your own (in this sense it is more of a forum for posted comments than a live chatroom). Most students really enjoy this.

Please do not use AI, like ChatGPT. I am interested in your personal ideas and reflections, not AI-generated content. Personal reflections get you maximum points. AI-generated ones will not.

You have an option in the second half of the course. You may either choose to write the final examination or to complete the final assignment (please note the due date). The choice is yours!

5. Final examination (31%). **Monday, December 7, 6-7:30 p.m.** The exam will be ONLINE on Canvas. The exam will be monitored using Zoom.

The final exam will be based on lecture and lab material and readings covered from the mid-term exam until the end of the term. The final exam will cover:

- Chapters 16-19 of *Geosystems 4CE*
- Eolian and Deserts online notes
- Theological Issues notes

OR

6. Final Assignment (31%) Proposal due **November 6**. Project due **December 7**.

You may either choose to write the final examination or to complete the final assignment (please note the due date). The choice is yours!

This project may take the form of a research paper or a more creative presentation - original artwork, drama, music, etc. In either case the topic chosen must relate to the subject matter of the course and must demonstrate research beyond the material presented in class.

References MUST include at least six (6) published materials such as books, articles, or websites by recognized authors (credible websites might include government, university, or professional association websites).

A brief written proposal must be submitted by email to the instructor) by the calendar date8, indicating

- your preferred topic,
- a proposed outline of your project, and
- ideas for resources

The assignment is due on the calendar due date (late submissions will NOT BE ACCEPTED because there will not be an opportunity to get them graded in time for the mark deadline). If you miss the due date, you MUST write the FINAL EXAM! Your project will be submitted online on Canvas or emailed to me at bmartin@briercrest.ca (if you do original art, photograph it and send it to me).

For written assignments, you are welcome to use any of the major recognized formatting styles you are familiar with(Chicago, APA, MLA, etc.). Be consistent.

AI-generated content, using tools like ChatGPT, is not acceptable. It will receive a "0" and you will be reported to the Dean for appropriate action.

I want your written assignments to clearly reflect your own individuality and personal insights.

Course Outline

See the Course Calendar on www.rossway.net/bcrest100/

Availability

Please note that I will check email messages at least once per day, Monday-Friday. Therefore Monday-Friday you should receive a response within 24 hours (approximately). I do not work on weekends. (Note your labs are due on Tuesdays so you don't have to work Sundays, either! 😊)

College Calendar

Students are expected to be aware of the policies that govern course work at Briercrest College. Please refer to the College Calendar: https://www.briercrestcollege.ca/academics/calendar/

Attendance (Semester Course)
All students missing more than two full weeks of a particular course from registration to the last day of classes will receive an automatic fail (0%).

Final Exams
Students are allowed 3 hours to write their final exams. Students must write their final exams as scheduled. ALL final exams are mandatory. Failure to write a final exam will result in an "F" (0%) for the course.

Late Assignments

The following is a statement of policy concerning late assignments in Geography 101:

- All assignments are due by midnight on the assigned day.
- Late assignments will receive a penalty of ten per cent per weekday to a maximum of 50 per cent deducted from the total assignment mark. After five weekdays, no late assignments will be accepted, and the grade for that assignment will be zero.

Assignment Extension Policy

- Faculty members do not have the authority to grant extensions beyond 5:00 p.m. of the last day of classes in the semester.

Editing

Another person(s) may read your written work, point out errors or shortcomings (i.e. grammatical errors, structural issues, citations, etc.), and discuss generic solutions, without providing any specific wording to the assignment (i.e. "write *x* instead of *y*").

Academic Honesty

As members of the Briercrest learning community, students have a responsibility to conduct themselves with integrity and honour. Students who cheat on exams, plagiarize, inappropriately collaborate, or use generative AI without instructor authorization violate the trust placed in them by their instructors, fellow students, and the college. Any such actions constitute a breach of academic honesty and will result in serious consequences, such as failure of an assignment, failure of a course, or expulsion from the college.

Plagiarism, whether intentional or involuntary, is the submission of the work of others, published or unpublished, in whole or in part without acknowledgment or proper documentation. All information, ideas and/or direct quotations taken from other primary or secondary sources must be documented appropriately.

> Generative AI is an umbrella term for a type of machine learning and a group of algorithms that can create new content, such as text, code, images, videos, music, or a combination of all these formats. Generative AI produces output in response to a query or prompt using generative models such as Large Language Models (LLMs) that rely on large datasets. Generative AI features are also often embedded within tools such as Grammarly, allowing these tools to generate new content, such as the rewriting, paraphrasing, or summarizing of existing text. The generated responses of these tools are probabilistic, which can result in errors and biases in responses.
>
> **The use of generative AI to create audio or visual media, to produce outlines, to generate partial or complete drafts of assignments, to answer questions on quizzes or exams, or to edit the grammar of assignment drafts is <u>NOT permitted</u> in Geography 100.**
>
> **I want YOUR personal insights, ideas, and creativity. Not an AI data centre's.**

Students are responsible for ensuring they are using their sources and completing their assignments with transparency and honesty. For more details, consult the College Calendar and the Briercrest Format Guide. In addition to being familiar with these pages, instructors assume that you have completed the Briercrest Academic Integrity course on Canvas and understand the information contained in it.

Academic Accommodations
Any student with a disability, injury, or health condition (mental or physical) who may need academic accommodations (permanent or temporary) should contact the ARC Coordinator in person (Room 217 across from Academic Services), by phone (1-306-801-6159), or by email (arc@briercrest.ca). Documentation from a qualified practitioner will be required (i.e. medical doctor, psychologist, etc.). It is recommended students meet with their professors to discuss the details of their accommodations (ex: how the student will receive lecture notes, or how the professor wants to receive extension requests).

Academic Resource Centre Referral
At Briercrest, we are a community of learning. Part of being a community means caring for one another. As such, if it is observed that students may benefit from additional support during the semester, they may be referred to the Academic Resource Centre. Neither the referral nor use of supports will appear on academic records.

Bibliography

There are many general texts that deal with geomorphology. Among the best are

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- Grotzinger, J., Jordan, T.H., Press, F., and Siever, R. *Understanding Earth (Fifth edition).* New York: Freeman. 2007.
- Summerfield, M. *Global Geomorphology.* Toronto: Pearson. 1996.
- Tarbuck, E.J. and Lutgens, F.K. *Earth Science (Twelth edition).* Upper Saddle River, NJ: Prentice Hall. 2009.
- Trenhaile, A.S. *Geomorphology: A Canadian Perspective.* Toronto: Oxford University Press. 2006.

On specific geomorphic processes and landforms:

- Bertola, G. *Glacier Science and Environmental Change.* New York: Wiley. 2006.
- Bird, E. *Coastal Geomorphology: An Introduction (Second edition*). Toronto: John Wiley and Sons. 2008.
- Bolt, B.A. *Earthquakes (Fifth edition).* New York: Freeman. 2004.
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- Decker, R. and Decker, B. *Volcanoes (fourth edition).* New York: Freeman. 2006.
- Hambrey, M. *Glaciers.* London: Cambridge University Press. 2004.
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- Parson, A.J. and Abrahams, A.D. *Geomorphology of Desert Environments.* New York: Springer. 2008.
- Ro, C. *Fundamentals of Fluvial Geomorphology.* London: Routledge. 2005.

On science and faith issues:

- Bancewicz, R. *God in the Lab: How Science Enhances Faith. Oxford: Monarch.* 2015.
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- Barbour, Ian. *When Science Meets Religion*: *Enemies, Strangers, or Partners?* San Francisco: Harper Collins. 2000.
- Berry, R.J. *True Scientists, True Faith.* Oxford: Lion Hudson. 2015.

- Berry, R.J. (Editor). *The Lion Handbook of Science and Christianity.* Oxford: Lion. 2012.
- Collins, F. *The Language of God: A Scientist Presents Evidence for Belief.* New York: Simon and Shuster. 2006.
- Dennett, D. and Plantinga, A. *Science and Religion: Are They Compatible?* Oxford: Oxford University Press. 2010.
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- Wilson, J. *God's Good World: Reclaiming the Doctrine of Creation*. Grand Rapids: Baker. 2013. (Note Wilson is a professor at Carey Theological College, Vancouver)

On Christianity and Environmental Concern:

- Badke, W.B. Project Earth: Preserving the World God Created. Portland: Multnomah. 1993.
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- Wilkinson, D. *The Message of Creation.* Grand Rapids: Inter Varsity. 2002
- Wilkinson, L. and Wilkinson, M. *Caring for Creation in your own Backyard*. Vancouver, BC: Regent College. 1998

Useful websites:

- Natural Resources Canada: https://www.nrcan.gc.ca/home
- United States Geological Survey: http://www.usgs.gov/