COURSE OUTLINE
GEOG 495: Field Studies – Physical Geography
May 19 - June 12, 2020

INSTRUCTOR:
Prof. Christian von Sperber  chris.vonsperber@mcgill.ca
Office hours: by appointment

TEACHING ASSISTANT:
Janice Neumann  janice.neumann@mail.mcgill.ca

CLASS TIME:
Monday - Friday 9:00 to 13:00 pm, Zoom

GENERAL ANNOUNCEMENT:
Due to the current crisis caused by the spread of COVID-19, this course cannot be conducted as original planned at the Gault Nature Reserve. As an alternative, I have planned a course that will cover field methods in physical geography in a series of online lectures and exercises. In addition, students will present and discuss laboratory and field methodologies based on readings from the scientific literature, and will complete an independent research study.

COURSE DESCRIPTION:
Field investigations remain an important source of data for research in physical geography and environmental science. The quality or value of a scientist's research often reflects their ability to observe and measure natural processes or phenomena in the field. The preparation, organization and conduct of field research are important components of a student's training. The success of any field sampling and measurement campaign in physical geography depends on following three main aspects:

1. a clear framing of the research question, objective and hypothesis,
2. the choice of a suitable field site for the field work and sampling campaign to test them,
3. precise measurement of the relevant parameters that allow you to test your hypotheses.

In the beginning of each empirical research project in the environment, questions occur dealing with where to conduct the field work, and how to collect, treat and analyze environmental samples, e.g. soils, plants, water, greenhouse gases, microplastics, insects, etc. For example, when collecting soils, the scientist needs to decide whether to keep the soil field fresh or whether to dry it, whether to sieve it or not and whether to homogenize it or not. To answer these questions, scientists often have to do an in-depth literature review before the beginning of a research project to make an informed decision. This course provides an introduction on field sampling and measurement techniques and on how to do a literature review on a specific methodology.

The first part of the course will consist of a series of lectures on field sampling and measurement techniques. In addition, we will have a guest lecturer each day who will talk about his own individual experience of doing research in the field. Each lecture will end with an exercise that needs to be completed by the end of the second week (Sunday, May 31). In addition, each student will give one presentation (about 45 minutes) of a scientific paper over Zoom which are then discussed together in detail in class. I will provide the scientific papers.

The second part of the course will be an independent research study. Students will write a review paper on a specific methodology in physical geography, for example a field or
laboratory measurement. During this period, I will be available for 1:1 meetings on Zoom to discuss questions concerning the independent research project. In the first week of the course, I will offer a range of topics for the independent research studies from which you can choose one. Alternatively, you are allowed to come up with your own research topic for your independent research study.

The term paper should be written in a journal article format: a 1500-2000 words (double spaced) limit on text including a bibliography. This format is designed to motivate you to organize your information and write concisely. The final paper will be submitted per email as word file for evaluation, diagrams must be neat and clearly presented. The deadline for submission is June 5, 2020. Throughout the three weeks of the course, I will be available online via Zoom to answer question and to give directions.

**COURSE EVALUATION:**
Presentation of scientific paper: 20%
Exercises: 10%
Participation in group discussion: 10%
Independent research study: 40%

*Please Note:* Policies governing academic issues which affect students can be found in the Handbook on Student Rights and Responsibilities, Charter of Students’ Rights (online at http://www.mcgill.ca/files/secretariat/greenbookenglish.pdf).

*Academic Integrity:* "McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/integrity/ for more information)."

“In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded.”

*Student Support:* If you have a disability, please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 398-6009 (online at http://www.mcgill.ca/osd) before you do this.

*Course Communication:* Communication to students will often be via email on MyCourses. Students are encouraged to check MyCourses regularly for course updates. While students can set-up forwarding of MyCourses emails to personal accounts, they are strongly encouraged to forward this mail only to their official McGill email account (not hotmail or yahoo). The university and instructor cannot guarantee that course emails will be successfully forwarded to external email accounts.