F23 OUTLINE

University of Guelph
Department of Geography, Environment and Geomatics
GEOG*2000 GEOMORPHOLOGY, 0.5 credits

FALL 2023 – Lectures MWF 8:30am-9:20am, See WebAdvisor for location

Instructor: Dr. Jaclyn Cockburn (pronouns: she/her/hers), Email: jaclyn.cockburn@uoguelph.ca
Office Hours: See CourseLink for details

Overview

The processes operating on and near the Earth's surface are responsible for the development of landforms, and the evolution of these landforms through time. What makes geomorphology different from the other earth science fields is that it is primarily rooted in the explanation of present landforms, though these surfaces may be ancient. In addition, it is focused on understanding active processes, processes that can be (at least theoretically) observed as they occur. From the perspective developed by studying the present, geomorphologists may seek to interpret the importance of past events on present landforms and make predictions about what may occur in the future. By the end of this course, I hope that you will be able to drive across southern Ontario with a new appreciation for the power and forces behind the shape of the landscape. We can see what southern Ontario (and the rest of the planet) are like today, what were they like 10 000, 100 000, 1 000 000 years ago? What will the landscape be like in the future?

Purpose

This course builds on major concepts from GEOG*1300 (and with some aspects of GEOG*1350) and is designed to complement GEOG*2110. The assigned (and required) textbook for this class should help you to stay on track, but you may want to consult an introduction to Physical Geography textbook in some instances, I can make recommendations if you come speak to me. In addition, this course provides a foundation for advanced courses in geomorphology at the 3000 and 4000 levels. A number of basic concepts in geomorphology will be introduced and the course will focus on examination of both landforms and geomorphic processes. While much of the material covered will be descriptive, rather than mathematical, the concept of geomorphology as an applied science will be stressed. Laboratories are designed to teach basic skills in field and data analysis techniques.

Calendar Description

This is an introduction to geomorphology emphasizing weathering, slope and fluvial processes within drainage basins, and glacial and periglacial processes. Field and laboratory techniques will be applied.

Prerequisites:
1 of ENGG*1100, ENVS*1050, ENVS*1060, GEOG*1300, GEOG*1350, GEOL*1050, GEOL*1100

Territorial Acknowledgement

Acknowledging the territory on which we learn, and work honours the relationship between lands, waters and the Indigenous ancestors and stewards of them. This acknowledgement is adapted from the University of Guelph Indigenous Resource Centre and Student Life.

The University of Guelph rests on the traditional territory of the Attawanderon people. We therefore acknowledge the Attawanderon people and offer our respect to Anishinaabe, Haudenosaunee and Métis neighbours as the university and community strive to strengthen our relationships with them. We also recognize the significance of the Dish with One Spoon Covenant to this land. The Dish with One Spoon Covenant is a peace agreement made between Indigenous nations before the Europeans arrived. It characterizes our collective responsibility to each other and Mother Earth -we should take only what we need, leave enough for others and keep the dish clean.

Statement on Expectations for Inclusivity

Different perspectives and lived experiences shape who we are and make our communities stronger. I want everyone in our class to feel that they belong and that their ideas, perspectives, and lived experiences are

important. It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups.

Organization

In general, there will be three lectures, with some class time being used for introduction or review of assignments or lab concepts. **There will be labs throughout the semester beginning the first full week of class in September (week beginning Monday Sept 11, 2023)**. Also, there is a half-day field trip scheduled for Sep 30 or Oct 1, depending on your lab section.

Learning Outcomes

Learning Outcomes are defined the university, program, major and course level. In our course, the Learning Outcomes are achieved through course design, activities and assessment. Learning Outcomes are our broad goals for this course or 'the things you should *know* once you've completed the course' are listed here. If you have any questions or concerns about this, please don't hesitate to discuss this with me.

Upon successful completion of GEOG*2000, students will be able to:

1. Recognize that Earth surface processes exemplify dynamic flows, interactions and exchanges at a variety of spatial and temporal scales.
2. Using a variety of data sets, evaluate Earth surface processes in the larger context of human-environment problems.
3. Collect and analyze relevant data, and practice interpreting its meaning within the appropriate context.
4. Practice communicating concepts and data:
    a. Using formal written and visual forms
    b. Through informal oral communication forms
5. Collaborate effectively in a group setting to pursue advanced issues within Earth surface processes that often require multi- or inter-disciplinary expertise.
6. Identify and evaluate geomorphic problems using critical thought in multiple settings/formats (e.g., in class, in the lab, in the field, in reports, on exams).
7. Related to LO 6 above, address these issues with the appropriate tools/methodology and the expected vocabulary.
8. Develop and synthesize ideas about the importance of holistic, integrative human-environment issues.
9. Demonstrate the societal relevance of geographical knowledge and identify how this is applied to real world Earth surface process issues.
10. Appreciate and value the role of respectful and responsible community engagement and active citizenship when addressing Earth surface processes and their role in human-environment issues.

For more information on Learning Outcomes see the following links:
University of Guelph, learning outcomes and Geography, learning outcomes

CourseLink Page, UofG Email/ID and Lecture Materials (notes & recordings)

There is a course webpage on CourseLink (the Learning Management System (LMS) used at University of Guelph). To access this resource, use your central account ID and password. This is the same login ID and password that is used to access your University of Guelph email and WebAdvisor. CourseLink can be accessed from the University's homepage. You need to check into CourseLink regularly (4-5 times a week) to be successful in this course.

Lecture slides are available on CourseLink as pdf files. These are *OUTLINE* slides; attendance during lectures is beneficial to your overall comprehension of the material – plus fun stuff happens at lectures! Provided the appropriate technology and support are available, I will do my best to record lectures and make them available via CourseLink within 24hrs of the lecture, but these will only be available for approximately 1 week once posted.

Seminars/discussions will not be recorded, lab sessions will not be recorded. Live-streaming will not be used in this course.

Textbook

Trenhaile, Alan, S., 2016. Geomorphology: A Canadian perspective. Oxford University Press. Sixth Edition, 608 pp. Limited copies will be available on course reserve at McLaughlin Library.

The 5th edition is also a reliable resource. You should note that the page numbers and assigned readings in the syllabus and referred to in lectures or assignments match the 6th edition. If you find yourself using an older edition, it might be worth borrowing a new edition or looking over the TOC for the 6th edition in the library to note discrepancies.

Lab Fee

There is a lab fee of $20.00, which covers the cost of field trips and most* of the lab materials; please submit this to your lab instructor **before the end of the day on September 29, 2023**, or you can give it to me on the day of your field trip. Cash only, correct change is appreciated.

*The Department of Geography, Environment & Geomatics highly values lab and field experiences and as such sets aside funds each year to supplement these important learning opportunities, even with this as a permanent budget item, we still need to collect a lab fee.

Field Trip

Scheduled for ***September 30 or October 1 2023,*** this is a half-day field trip that involves a pre-trip quiz (online) and post-trip assignment. Details about the field trip will be presented during class and posted on CourseLink (e.g., time, meeting place, pre-trip quiz and guidebook). We focus on basic geomorphology principles on the field trip and take you to some excellent examples. If you have any concerns about the field trip, please reach out as soon as possible.

Evaluation (select your scheme before the last day of classes, December 1, 2023)

Scheme A (if you do not select a scheme by Dec 1, this is the scheme you will be evaluated on):
The final grade will be assessed from weekly review quizzes completed online (10%), assignments (lab & field) (40% total), and a midterm (25%) and final exam (25%). Quizzes are based on information presented and discussed in lectures, assigned readings and assignments. In summary:

Weekly Review Quizzes (online)	10%
Field Trip Assignment & Pre-Trip Quiz	10%
Lab Assignments (5 total)	30%
Midterm	25%
Final Exam (cumulative)	25%

Failure to pass the midterm and/or final may result in failure in the course

Scheme B:
The final grade will be based on the assignments (field and lab) (40% total), midterm (30%), and the final exam (30%). You have access, and are encouraged to complete the weekly review quizzes, but the score on the quizzes will not count toward your final grade, thus the midterm and final exam section of your evaluation is weighted more heavily. Weekly review quizzes, the midterm, and final exam are based on information presented and discussed in lectures, assigned readings and assignments. In summary:

Field Project	10%
Lab Assignments (5 total)	30%
Midterm	30%
Final Exam (cumulative)	30%

Failure to pass the midterm and/or final may result in failure in the course

Students with a documented conflict for any assignment, quiz, midterm, or final exam need to **see me at least two weeks prior** to arrange an alternative time, there is no guarantee that this will be accommodated, but ensuring that you address the issue several weeks in advance will certainly assist the process. Please review the policies on extension requests and grading for additional information.

Schedule and Important Dates

Lectures: Monday, Wednesday, Friday → 8:30am-9:20am
Labs: As described below, sections posted on WebAdvisor
Field trip (according to your lab section, either Saturday Sep 30, or Sunday Oct 1, 2023) details posted on CourseLink.
Midterm: **8:30am-9:20 am, Friday October 27, 2023, in class**
Final Exam: **2:30pm – 4:30pm, Tuesday December 5, 2023, location TBA**

Turnitin

In this course we will be using Turnitin integrated with the CourseLink Dropbox tool to detect potential plagiarism, unauthorized collaboration, and/or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph. All materials submitted to the Dropbox will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting inappropriate use. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing academic misconduct. In this course you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced outside source and materials in your assignment. Please contact me if you have questions or concerns about this software.

Online Behaviour

Inappropriate online behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor, TA and/ or fellow students
- Using obscene or offensive language online
- Copying or presenting someone else's work as your own
- Adapting information from the Internet without using proper citations or references
- Buying or selling term papers or assignments
- Posting or selling course materials to course notes websites
- Having someone else complete your quiz
- Completing a quiz for/with another student when collaboration is not permitted
- Stating false claims about lost quiz answers or other assignment submissions
- Threatening or harassing a student, TA and/ or instructor online
- Discriminating against fellow students, instructors and/or TAs
- Using the course website to promote profit-driven products or services
- Attempting to compromise the security or functionality of the learning management system
- Sharing your username and password
- Recording lectures without the permission of the instructor

How to succeed in this course

I believe success is possible in anything you set your mind to, therefore starting this class and each task associated with it with an engaged, positive, and excited attitude puts you well on your way to an excellent experience. There are some other things that will also help you to succeed. Come to class prepared to participate; ask questions; complete your assignments, read them over, read the questions, did you answer and address all the issues? When you are proud of your assignment, hand it in. Talk to me about your assignments; before you hand them and after you get feedback on them. Discussing issues in class, in the hall, in the lab or wherever, often makes the point and the issue clearer than just considering it once. Learning and comprehending concepts is not done through memorization, I rarely test memory, I want to know that you understand and can relate the concept back to me or to someone else. However, in order to do these things, you need to have a set of tools that often include vocabulary, so these tools will be important to your success. Have fun, I always remember fun things, and events

that were mediocre or uninteresting I easily forget. If you come with the right attitude, I will do my best to make this a fun, interesting and exciting class.

I know you will be successful in this course, I believe in you.

PROVISIONAL F23 SCHEDULE

Lectures Week 1 (Sept 11) → Week 7 (Oct 27). *Detailed lab schedule below*

- *Field Trip Sep 30 or Oct 1 – see class notes and CourseLink for details*
- *Week 6 – in lab stream work - if you have waders or rubber boots bring them this week, if not that is okay, we have a bunch in the department to share*
- Midterm: Friday Oct 27, in class, 50 minutes

Week	Date	Lecture Topic	Reading
0	Sept 10	No Class Meeting – see info online for the course intro, logistics & L.O.s	Skim Ch 1
0	No Labs		*No Labs*
Week 1 → Lectures and Lab 1			**Ch 2**
1.1		• Geomorph Principles, Equilibrium, internal/external forces	Chapter 1 & 2
1.2		• Resisting Forces & Driving vs Resisting Forces	Chapter 2
1.3		• Physical Background to Canada & Tectonic setting	Chapter 3
1	Lab 1	*Intro to Labs and Assignment 1 - Data Analyses in Geomorphology*	
Week 2 → Lectures (no labs)			**Ch 3 & 4**
2.1		• Canadian Tectonic Setting cont & Rock cycle, major rocks and minerals	Chapter 3
2.2		• Bowen Reaction series & Weathering Introduction/Review	Chapter 3/4
2.3		• Chemical weathering	Chapter 4
2	*No Lab*	No Labs this week	
Week 3 → Lectures and Lab 2, field trip over the weekend			**Ch 4, 5 & pts of 9**
3.1		• Physical Weathering & Soil formation & Soil geomorphology	Chapter 4
3.2		• Slope form and processes intro & Infinite slope model	Chapter 5
3.3		• Slope hydrology & Mass wasting (parts of chapter 9 here too)	Ch 5 / 9(parts)
3	Lab 2	*Global Position Systems (GPS) and Tracking Hazards*	
Field trip Sep 30 or Oct 1			
Week 4 → Lectures (no lab)			**Ch 6**
4.1		• Periglacial Environments	Chapter 9
4.2		• Periglacial Environments	Chapter 9
4.3		• Introduction to glaciers and glacial processes	Chapter 6
4	*No Lab*	No Labs this week	
Week 5 → Thanksgiving Monday, Lectures W & F, no labs			**Ch 7**
5.1		Oct 9 Thanksgiving – no class	
5.2		• Glacial landscapes	Chapter 7
5.3		• Glacial landscapes cont.	Chapter 7
5	*No Lab*	No Labs this week (Thanksgiving)	
Week 6 → Lectures, Lab 3 field work			**Ch 6, 7 & 8**
6.1		• Glacial landscapes cont.	Ch 6/7
6.2		• Conclude glacial processes and landforms	Ch 6/7
6.3		• Last Glacial Max – Canadian Focus	Chapter 8
6	Lab 3	*Lab 3 – part 1 - Stream Gauging & Stream Assessments (data collection)*	*Field Work*
Week 7 → Lectures, Midterm, Lab 3 cont			
7.1		- Ice Ages: Canadian landscape at LGM and since	Ch 8
7.2		- Ice Ages: Canadian landscape at LGM and since, possible Midterm Review	
7.3		**Midterm – in class – 50 minutes**	**Ch 1-9, lectures**
7	Lab 3 cont	*Lab 3 – part 2 Hydrological Data Analyses*	In the lab

Tentative GEOG*2000 F23 Schedule cont. (schedule may change depending on progress and public safety)

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Week 8 (Oct 30) → Week 12 (Dec 1)
Detailed lab schedule below

	Date	Lecture Topic	Reading
Week 8 → Lectures (no lab)			**Ch 10**
8.1		• Introduction to Fluvial Processes, generating streamflow	Ch 10
8.2		• Fluvial Processes – measurement & Runoff Ratios in Urban Streams	Chapter 10
8.3		• Fluvial Processes – transportation, flow competence & Stream erosion	Chapter 10
8	No lab	No Lab This Week	
Week 9 → Lectures and Lab 4			**Ch 11**
9.1		• Fluvial Landform Introduction & Stream morphology	Skim Ch 11
9.2		• Landuse impacts on stream form & Urban vs Rural stream issues	Chapter 11
9.3		• Fluvial process issues in the Guelph region & Case studies	Chapter 11
9	Lab 4	*Lab 4 – Bedforms and Planforms*	
Week 10 → Lectures (no lab)			
10.1		• Coastal processes and landforms – introduction (parts of Ch 12 are used here too)	SkimCh13/ 12(parts)
10.2		• The Wave environment & Sea level changes and its impact on coasts	Chapter 13
10.3		• Eustatic and Isostatic sea level changes & Case studies	Chapter 13
10	No Lab	No Lab	
Week 11 → Lectures and Lab 5			
11.1		• Introduction to coastal landforms & Coasts of Canada	Chapter 14
11.2		• Beach environment & Barrier environment	Chapter 14
11.3		• Deltas and estuaries & Fraser River, St Lawrence, Mackenzie, Mississippi deltas	Chapter 14
11	Lab 5	*Coastal Classification*	
Week 12 → Lectures (no lab)			
12.1		• Environmental Geomorphology & Role of Geomorphologist & Professional Geoscientists, Out of this world	Chapter 16
12.2		• Learning outcomes reviewed, the next steps	Chapter 16
12.3		• Course wrap-up, exam review, closing discussions	
12	No Lab	No Lab	

Tentative GEOG*2000 F23 Schedule cont. (schedule may change depending on progress and public safety)

Midterm: In class, 8:30am-9:20am, Friday Oct 27, 2023

Final Exam: this is cumulative, 2:30pm-4:30pm, Tuesday Dec 5, 2023, location tba

GEOG*2000 Geomorphology Lab Schedule

*Week 0	No Labs
Week 1	Lab 1, meet your TA, go over lab logistics, data collection & topo maps assignment
	Assignment 1 – Data Analyses in Geomorphology
Week 2	No Lab
Week 3	Lab 2 – Global Positioning Systems, Surveying, Tracking Hazards (volcanic)
	Assignment 2 – Monitoring Hazards using GPS
Week 4	No Lab
Week 5	No Lab (Thanksgiving)
Week 6 (meet outside)	Lab 3 – Part 1 - Stream Gauging and Stream Assessments Field Work (data collection)
Week 7 (Hutt 240b)	Lab 3 – Part 2 - Stream Gauging and Hydrological Data Analysis
	Assignment 3 – Stream Assessments and Characterization
Week 8	No Lab
Week 9 (meet in Hutt 020)	Lab 4 –Bedforms and planforms,
	Assignment 4 – Describing and evaluating fluvial change
Week 10	No Lab
Week 11 (meet in Hutt 020)	Lab 5 – Wave energy and coastal processes
	Assignment 5 – Relationship between wave energy theory and observations
Week 12	No Lab

*Weeks are numbered starting with the first FULL week of the semester, so week 1 starts on Monday September 11, week 0 is Sept 7 and 8.

*****UNLESS CLEARLY STATED OTHERWISE, LAB ASSIGNMENT SUBMISSIONS ARE COMPLETETED INDEPENDENTLY AND MUST BE YOUR ORIGINAL WORK*****

Lab meetings are scheduled in Hutt 240B, but may move to another location depending on the activity (e.g., Hutt 020 for experiments, outdoors, or online). You are expected to make use of Excel or similar spreadsheet programs to carry out the analyses required.

Extension Requests and Policies
Good reasons for coursework extensions are unexpected short-term circumstances which are exceptional for the individual student, beyond that student's control, and which could reasonably be expected to have had an adverse impact on the student's ability to complete the assessment on time.
Suitable reasons may include:

- Recent short-term physical illness or injury
- Recent short-term mental wellness concerns
- A long-term or chronic physical health condition, which has recently worsened temporarily or permanently
- A long-term or chronic mental health condition, which has recently worsened temporarily or permanently
- The recent bereavement or serious illness of a person with whom the student has a close relationship
- The recent breakdown in a long-term relationship
- Emergencies involving dependents
- Job or internship interview at short notice that requires significant time (e.g., due to travel)
- Victim of a crime which is likely to have significant emotional impact
- Military conflict, natural disaster, or extreme weather conditions

In addition to these unexpected circumstances, we will also consider requests for coursework extensions in relation to:

- A student's needs where the student is registered with Student Accessibility Services and accommodations are noted and on file. Please note registration with SAS will be treated sympathetically as part of the case for an extension, registration with SAS does not guarantee an extension.

Unsuitable reasons
The following are examples of circumstances which would not be considered suitable reasons for coursework extensions:

- A long-term or chronic health condition (including mental ill-health or similar ill-health) which has not worsened recently or for which the University has already made a reasonable adjustment
- A minor short-term illness or injury (e.g., a common cold), which would not reasonably have had a significant adverse impact on the student's ability to complete the assessment on time
- Occasional low mood, stress, or anxiety
- Circumstances which were foreseeable or preventable
- Holidays
- Pressure of academic work (unless this contributes to ill-health)
- Poor time-management
- Proximity to other assessments
- Lack of awareness of dates or times of assessment submission
- Failure, loss or theft of data, a computer or other equipment
- Commitments to paid or voluntary employment

Grading Policies / Requests for Re-Grades
Assessment (grades) are viewed by learners in different ways depending on their individual goals and circumstances. Students can request grade reviews but must submit these requests via email to the TA and Instructor within 5 days of the grades being published. In the email, there needs to be a clear statement of concern (e.g., adding error, missed interpretation). The individual (TA or Instructor) that graded the assignment is responsible for initial reviews (e.g., Lab assignment questions go to the TA first, then the instructor). If appropriate the assignment grade will be re-adjusted. Submitting the wrong assignment/file, misunderstanding the question, and thus incorrectly responding, are not grounds for a re-grade, but requests can still be submitted and will be considered.

Lab discussion/email
A separate discussion board for labs will be set up on CourseLink so that if you have questions related to the lab you can post a message there and either someone in the class or one of the TAs can answer it. It will also serve as a repository for FAQs, so if you have a question, check here first to see if an answer has been posted. Please do this rather than e-mail your TA directly.

E-mail Communication
As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement
When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration.

Drop Date
The last date to drop one-semester courses, without academic penalty, is the last day of classes in the semester (December 1, 2023). For regulations and procedures for Dropping Courses, see the Undergraduate Calendar.

Copies of out-of-class assignments
Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility
The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual

rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the Student Accessibility Services website.

Academic Misconduct
The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor. The Academic Misconduct Policy is detailed in the Undergraduate Calendar

Recording of Materials
Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources
The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

Disclaimer
Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email. This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (https://news.uoguelph.ca/2019-novel-coronavirus-information/) and circulated by email.

For information on current safety protocols, please refer to the UofG COVID Return Campus website.
Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives