

University of Guelph
Department of Geography, Environment and Geomatics
GEOG*3000 Fluvial Processes, 0.5 credits

FALL 2026, see WebAdvisor for time and location

Instructor: Dr. Jaclyn Cockburn (pronouns: she/her/hers)
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Office Hours: Wednesday mid-day, see CourseLink for details

Why should I take this course?

Fluvial geomorphology is a busy/growing/popular aspect of Geosciences (physical geography and geology) that requires advanced understanding of fluid mechanics and hydrology. Students taking this course can expect to advance their understanding in fluvial processes and its related fields, and refine skills developed in 2nd year physical geography courses.

Purpose

This course examines the dynamic processes and landforms related to rivers and how they change spatially and temporally. This course will use lectures, discussions, lab and field activities to address topics in fluvial geomorphology including the physical properties of water flow, sediment transport, channel pattern, environmental change, human impact on river systems, and applied geomorphology.

Calendar Description

This course examines processes and landforms associated with rivers. Particular emphasis is placed on the interaction between water and sediment movement and channel morphology. Case studies of human impact on river systems are presented.

Prerequisite(s): GEOG*2000, (1 of GEOG*2460, STAT*2040, STAT*2120, STAT*2230)

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 Attawandaron people. We therefore acknowledge the Attawandaron 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 per week, 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 14, 2026).**

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*3000, students will be able to:

1. Analyze the Earth as an integrated human-environment system.
 - Examine and describe flow characteristics, interactions and exchanges within fluvial networks
2. Integrate knowledge from previous courses and material used in this course to develop critical ideas and understanding of the major processes influencing fluvial systems.
 - Synthesize assigned readings
 - Integrate key elements from previous courses with this course – e.g., principles of geomorphology, elements of equilibrium
3. Collect and analyze data and generate interpretations that demonstrate key Fluvial Geomorphology concept interrelatedness.
 - Execute data collection
 - Complete data analysis following standard procedures in the Geosciences
 - Draw interpretations from the data analysis and contextualize these within the appropriate literature
 - Utilize appropriate visualizations and terminology
4. Investigate complex real-world challenges related to Fluvial Systems.
 - Define variables contributing to real-life river/stream issues/problems
 - Actively reflect and participate in class discussions
 - Utilize appropriate terminology
5. Develop and improve written communication and data presentation skills related to key Fluvial Processes concepts.
 - Recognize the variety of written communication opportunities
 - Utilize appropriate terminology
6. Construct and curate skills and attributes expected for individuals working and interacting within the Geosciences.
 - Identify and self-reflect on the skills and attributes of Geoscientists
 - Confidently and effectively communicate using appropriate and concise language and terminology
 - Mobilizing and transcribing knowledge and skills

For more information 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.

Provisional F26 Outline

Lecture slides will be available on CourseLink as pdf files, as soon as they are ready. These are *OUTLINE* slides; attendance during lectures is beneficial to your overall comprehension of the material – plus fun stuff happens at lectures! Lectures will not be recorded.

Textbook and Readings

Robert, Andre (2003) River Processes: An introduction to fluvial dynamics, Hodder, 214 pp.

This book has also been published by Routledge.

This textbook is required, we will use it every week. I will do my best to ensure there is a copy in Reserves at the library. If you see yourself pursuing environmental science or river science as a professional, I highly recommend you invest in this book to include in your personal library.

Print copies are available via Amazon (~\$70). Used copies of the text are available for less (~\$20) – totally worth finding a used copy.

In addition to the book, there are several chapters from others that will be scanned and available via CourseLink in the Lecture Materials section. **PLEASE CHECK THE LECTURE MATERIALS SECTION OF COURSELINK.**

Finally, from time to time there are additional articles (short) that will be part of the materials used in our course, these will also be posted on CourseLink.

Evaluation

The final grade will be assessed on lab assignments, a midterm and cumulative final exam, in summary:

Assignments (Lab 1-3 worth 10%, Lab 4 worth 20%)	50%
Midterm (Friday Nov 6, 2026, in class (50 minutes))	25%
Final Exam (cumulative, date/location tba by UofG)	35%

*Failure to complete all of the assignments and pass the final may result in failure in the course

Lab Assignments

There are four lab assignments in this course, however Lab 4 takes place over at least 4 lab sessions and has several deliverables over those dates (see lab schedule below) that are 10-20% of your final grade. Labs are typically due one week after they are presented, by 11:59pm to the CourseLink dropbox. You are expected to make use of Excel for computational and analytical purposes. Your work needs to be your own original work for this course – you are not permitted to re-use material from other courses / projects. Attendance in labs is mandatory; the TA will be recording attendance at each lab meeting. The TA will not respond to emails from students who fail to regularly attend labs.

*****UNLESS CLEARLY STATED OTHERWISE, ALL SUBMITTED MATERIALS ARE COMPLETED INDEPENDENTLY AND MUST BE YOUR ORIGINAL WORK. Please review the use of Generative AI Policy on CourseLink.*****

Students with a documented conflict for any assessment or activity 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 policy on extension requests and grading for additional information.

Turnitin

In this course we use 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

Provisional F26 Outline

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.

Behaviour

Inappropriate behaviour (online or in-person) will not be tolerated. Examples of inappropriate 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, instructor and/or TA
- 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

Schedule and Important Dates

Lectures – listed on WebAdvisor

Midterm – Friday Nov 6, 2026, in class (50 minutes)

Final Exam: as scheduled by UofG

Anticipated Fall 2026 Lecture Schedule

Week	Lecture Topic	Reading
0 Fri Sep 11	Class intro and expectations, basic principles	CourseLink Info, Outline, Robert Ch 1
1	Pathways & Connectivity, drainage networks, flow principles	Robert Ch1
2	Water Flow Principles and Characterization (incl stats)	Sections from Knighton Ch 2&3 (pdf on CourseLink) Robert Ch 2
3	Water Flow Principles & Characterization, start sed dynamics	Robert Ch 2 & 3
4	Sediment Dynamics	Robert Ch 3
5	Sediment Dynamics (& other things – wood and carbon)	Robert Ch 3
6	<i>Thanksgiving – no classes or labs Oct 13 & 14, Turbulence</i>	Robert Ch 3
7	Sed dynamics finished and Bedforms started	Robert Ch 3 & 4
8	Bedforms finished & Friday Nov 6 midterm	Robert Ch 4
9	Channel Form, Behaviour & Adjustment, Geomorphic Units	Robert Ch 5
10	Extra-channel Environments & Adjustment	Robert Ch 5
11	Rivers in the Landscape	Robert Ch 6
12	Rivers in the Landscape & Aquatic Habitats	Robert Ch 6

F26 Lab Schedule (students attend A or B if lab is split)

Lab/Assignment	Week	Topic	Due Date
1 Hutt 020	Week 1	Topographic Maps & Surface Water	Due one week from lab day
2 Hutt 020	Week 2	Flow statistics (general)	Due one week from lab day
3 Hutt 020	Week 3	Turbulence	Due one week from lab day
4 Hutt 020	Week 4	Flume Exp, group selection, project id	
Week 5 Oct 12-13		No labs or office hours on these days – <i>Thanksgiving & Fall Break</i>	
4A Hutt 020	Week 7	Flume exp – data collection A groups	
4B Hutt 020	Week 8	Flume exp – data collection B groups	
4 Hutt 020	Week 9	Flume exp – check-in presentation	Presentation
4 Hutt 020	Week 10	Flume exp – final poster presentation	Poster (digital) presented in lab

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.

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 have the ability to 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 first 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 TA or myself 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 (Dec 4, 2026). 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](tel: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 (and that semester) 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.

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives