Why should I take this course?
Fluvial geomorphology is a rapidly growing field that requires advanced understanding of fluid mechanics and hydrology. Students taking this course can expect to advance their understanding fluvial geomorphology 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, (GEOG*2460 or STAT*2040)

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 safe, 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.

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

FALL 2020 – Monday, Wednesday, Friday
MWF 9:30-10:20am, Place – Virtual – see CourseLink

Instructor: Dr. Jaclyn Cockburn (pronouns: she/her)
Email: jaclyn.cockburn@uoguelph.ca
Office Hours: Wednesdays 12-2pm, via Zoom – see CourseLink for info
Organization
In general, there will be three lectures most weeks (via Zoom – Link on CourseLink), 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, 2020). Due to the ongoing Public Health concerns about COVID-19, there will be no field trips in this course this semester.

Learning Outcomes
The University of Guelph is a leader in Learning Outcomes at universities. Specifically, there are Learning Outcomes defined that are applicable to all undergraduate students. Additionally, each degree program and major have specific Learning Outcomes that contribute to the overall University goals (see the links below for University LOs and Majors in Geography, Environment & Geomatics LOs). In order to achieve these in GEOG*3000 we have a specific set of Learning Outcomes as well. The course activities and overall course design relate to these Learning Outcomes 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.

GEOG*3000 Learning Outcomes

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., principals 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
Lecture slides and related recordings are available on CourseLink. Attendance during synchronous lecture and lab meetings is beneficial to your overall comprehension of the material – plus fun stuff happens!

Textbook

Used copies of the text are available on Amazon (~$42 - $80), as well it is possible to rent the e-text (e.g., vitalsource.com) for ~$100. A copy will be on Course Reserve in the library, but it is unclear to me how accessible Course Reserves will be over the semester. I highly recommend finding a used copy of the book for the semester. We will use the text every week.

Evaluation
The final grade will be assessed on quizzes completed, lab assignments, stream projects, and a midterm and cumulative final exam, in summary:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes (4 total, week 3, week 5, week 9, week 11)</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments (5 Labs)</td>
<td>25%</td>
</tr>
<tr>
<td>Stream Project (Term-Long Project)</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm (In class Monday Oct 26, 9:30-10:20am)</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam (cumulative, Friday December 18, 11:30am – 1:30 pm)</td>
<td>30%</td>
</tr>
</tbody>
</table>

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

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 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 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 user name and password
- Recording lectures without the permission of the instructor
Schedule and Important Dates

Lectures, MWF time 9:30-10:20am, via Zoom – links on CourseLink

Midterm: In class, 9:30-10:20am, Monday October 26, 2020, using CourseLink Quiz Tool & Respondus Lockdown Browser and Monitor

Final Exam: This is cumulative. 11:30 am-1:30 pm, Friday December 18, 2020, using CourseLink Quiz Tool & Respondus Lockdown Browser and Monitor

Stream Project: 11:59 pm, Friday December 4, 2020, via CourseLink DropBox - details about the project will be shared in the first week of classes and posted to CourseLink.

Tentative Fall 2020 Lecture Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture Topic</th>
<th>Reading*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Fri Sept 11</td>
<td>Course Intro, logistics and learning outcomes, Labs, Stream Project</td>
<td>CourseLink Info, Outline &amp; “How to...” document</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Basic Principles</td>
<td>Ch 1 Charlton &amp; Ch 1 Robert**</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Fluvial System</td>
<td>Ch 2</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Flow Regime</td>
<td>Ch 3</td>
</tr>
<tr>
<td>4</td>
<td>Oct 12</td>
<td>Sediment &amp; Carbon Sources</td>
<td>Ch 4</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Large-scale Sediment Transfer</td>
<td>Ch 5</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Sediment Transfer Dynamics &amp; Midterm Prep/Review</td>
<td>Ch 5</td>
</tr>
<tr>
<td>7</td>
<td>Oct 26</td>
<td>MIDTERM on MONDAY during class time</td>
<td>Ch 1-5 (Charlton), Ch 1 Robert, all lecture material</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Channel Processes - Flow in Channels</td>
<td>Ch 6</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Flow Behaviour, Bedrock Channels &amp; Alluvial Channels</td>
<td>Ch 7</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Channel Form, Behaviour &amp; Adjustment, Geomorphic Units</td>
<td>Ch 8</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Response to Change</td>
<td>Ch 9</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Response to Change &amp; Management Issues</td>
<td>Ch 10</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Aquatic Habitats</td>
<td>Ch 10 &amp; Ch 6 Robert**</td>
</tr>
</tbody>
</table>

The schedule may change depending on our progress.

*Unless otherwise noted, all readings are from Charlton

**Two chapters from Robert’s River Processes: An Introduction to Fluvial Dynamics will be available via PDF on CourseLink.
Tentative Fall 2020 Lab Schedule

Labs are nearly every week, beginning the week of Sept 14, and are due the following week by 11:59pm on the day of the lab to the CourseLink Dropbox. 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. Labs are held virtually this year using Teams.

<table>
<thead>
<tr>
<th>Lab/Assignment</th>
<th>Date</th>
<th>Topic</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mon Sept 14 or Wed Sept 16</td>
<td>Drainage Network Surveys</td>
<td>Due one week from lab day</td>
</tr>
<tr>
<td>2</td>
<td>Mon Sept 28 or Wed Sept 30</td>
<td>Flow Regime Analysis</td>
<td>Due one week from lab day</td>
</tr>
<tr>
<td></td>
<td>Oct 12 &amp; 13</td>
<td>No labs or office hours</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mon Oct 19 or Wed Oct 21</td>
<td>Sediment Transfer Experiments</td>
<td>Due TWO weeks from lab day (b/c of the midterm on Oct 26)</td>
</tr>
<tr>
<td>4</td>
<td>Mon Nov 9 or Wed Nov 11</td>
<td>Channel Geometries</td>
<td>Due one week from lab day</td>
</tr>
<tr>
<td>5</td>
<td>Mon Nov 23 or Wed Nov 25</td>
<td>Rapid Geomorphic Assessments (RGAs) &amp; Rapid Stream Assessments (RSATs)</td>
<td>Due one week from lab day</td>
</tr>
</tbody>
</table>

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

You are expected to make use of Excel or similar spreadsheet programs to carry out the analyses required.

*Late assignments will be penalized at 10% per day. This applies to labs and the stream project, and starts immediately following the deadline, including weekends.*

**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.
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 4, 2020). 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 and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website [hyperlink to the website] and circulated by email.

Illness
The University will not require verification of illness (doctor's notes) for the fall 2020 or winter 2021 semesters.