

**DEPARTMENT OF GEOGRAPHY**  
University of Toronto

**COURSE OUTLINE**

**COURSE: GGR 1202S – Sedimentation and Fluvial Geomorphology**

**INSTRUCTOR:** Joe Desloges ([joseph.desloges@utoronto.ca](mailto:joseph.desloges@utoronto.ca))

Room 2124 – Earth Sciences (ES)  
22 Russell St. - Tel: 416-978-5782

Room 205 – Woodsworth College (WDW)  
119 St. George St. (Old House Section): Tel: 416-978-5782

**Prerequisites:** Physical Geography, Earth Science or Geoarchaeology background;

**Lecture:** Graduates are asked to sit in on GGR301S lectures on R1-3; Room TBA.  
There will be 4-5 separate seminars sessions for graduates only. Room TBA

**Course Structure:** Lectures, readings, seminar discussion, presentations, one lab exercise

**Textbook:** Wohl, E. 2014. Rivers in the Landscape: Science and Management. Wiley-Blackwell, 318 p.

**Objectives:**

- (a) An interpretation of the morphology of rivers, fluvial landscapes and related freshwater lacustrine systems.
- (b) To introduce the main processes that occur in rivers and lakes, and the means for observing them.
- (c) To consider some of the techniques for analysis of river morphology and processes and understand the response to natural and human induced environmental change.
- (d) To introduce the geomorphological, earth science, engineering and river management literature which is relevant to the subject.

**PROGRAMME:**

- (1) Lectures: Participants are asked to sit in on GGR301S lectures, particularly if you have no fluvial geomorphology in your background. Lectures are Thursdays 1-3
- (2) Seminars: 4-5 meetings (time TBA). You will be asked to lead the critique of papers assigned for at least one of the seminar sessions
- (3) One flume demonstration to review principles of flow dynamics and sediment transport.
- (3) Research Paper Topics – due **February 10, 2017**.

Topics or themes for the research paper need to be identified by this seminar date. Please submit a title, abstract and 3-5 key annotated references that highlight the proposed theme.

- (4) Research Paper Bibliography – due **February 24, 2017**.

This should be a comprehensive list of highly relevant references to the proposed paper. References should be tied to key major themes or sub-themes of research.

- (5) Research Paper – due **March 31, 2017**

You are expected to organize the literature relevant to the topic and write up to 6000 words (approx. 20 pages) for the research paper (figures and tables can be extra).

All assignments should be handed in during seminar sessions.

<b>Evaluation:</b> Seminar - leading and participation	20%
Bibliography	10%
Research Paper	70%

**Accessibility Needs:** The University of Toronto is committed to accessibility. If you require accommodations or have any accessibility concerns, please visit <http://studentlife.utoronto.ca/accessibility> as soon as possible. Students may also want to contact Accessibility Services Office if they

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**GGR1202S**  
***Fluvial and Sedimentation Geomorphology***

**Selected Class Topics and Reading List**

**INTRODUCTION AND OPEN CHANNEL FLOW**

**SEDIMENT TRANSPORT - 1**

**SEDIMENT TRANSPORT - 2**

**TRACTIVE FORCE AND REGIME THEORY HYDRAULIC GEOMETRY**

**STABILITY OF RIVER CHANNELS**

**MECHANISMS OF FLOODPLAIN FORMATION**

**PHYSICAL SEDIMENTATION IN LAKES**

**RIVER CHANNEL MANAGEMENT AND DESIGN**

**SUSTAINABLE RIVERS AND RIVER HERITAGE**

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**GGR 1202**                      **Supplementary References**

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- Allison, Robert and Burt, Tim. 2010. Sediment cascades: an integrated approach. John Wiley and Sons, N.Y., ISBN 0470849622, 471 p.
- Anderson, M.G., Walling, D.E. and Bates, P.D. 1996. Floodplain processes. John Wiley and Sons, London, 658 p.
- Arnell, N. 1996. Global warming, river flows and water resources. John Wiley and Sons, Chichester, 224 p.
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- Bennett, S.J. and Simon, A. (editors) 2004. Riparian vegetation and fluvial geomorphology. American Geophysical Union, Washington, D.C., 281 p.
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