

# CIVL 884: Course Information Package

Dates: August 27 to September 1, 2017  
Instructors: Dr. Kent Novakowski, Professor and Department Head, Department of Civil Engineering  
Dr. Geoffrey Hall, Associate Director, Beaty Water Research Centre  
Dr. Peter Pehme, G360 – Centre for Applied Groundwater Research, University of Guelph  
TAs: Issam Bou Jaoude ([4ib5@queensu.ca](mailto:4ib5@queensu.ca)) and Stephanie Wright ([12snw@queensu.ca](mailto:12snw@queensu.ca))  
Website: <http://www.waterresearchcentre.ca/hydrogeology-field-course.html>

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## Administration

### I. Enrollment

Queen's students: Please fill out an academic change form (ACF) to enroll in the course. Forms are available in the civil office (Ellis 241) and online at <http://www.queensu.ca/registrar/forms>

Please obtain the necessary signatures and then give your form to Debbie Ritchie, in the civil office.

Students from other Ontario universities: Please register through the Ontario Visiting Graduate Student program. Forms are available at your university. See the flyer for more details.

### II. Payment

Course fees are \$200 for students, \$1000 for non-students/academics and \$2000 for professionals. Please make cheques payable to Queen's University Department of Civil Engineering. Please mail cheques to Heather Hill, Department of Civil Engineering, 58 University Ave, Ellis Hall, Kingston, ON, K7L 3N6.

Payment by credit card is also possible. Please complete attached credit card payment form.

### III. Credit

All participants will receive a certificate recognizing their participation in the course. This certificate may be used to verify professional development hours for industry participants. The course will also be recognized officially on students' transcripts. Please contact Debbie Ritchie at [debbie.ritchie@queensu.ca](mailto:debbie.ritchie@queensu.ca) if you have any questions about academic credits.

## Logistics

### I. Locations

Classroom portions of the course will be held at the Queen's University campus. The field portion will take place at the Kennedy Field Site, just north of Tamworth. Various rock outcrops near the Kennedy Field Site will also be examined.

#### *Kennedy Field Site*



## II. Transportation

Transportation will be provided between Queen's campus and the field sites every day. Participants are also welcome to drive personal vehicles to the field sites. Directions to the Kennedy Field Site from Queen's campus are as follows:

1. Head west on Union Street.
2. Turn right on Sir John A. MacDonald Boulevard.
3. Take the onramp onto the west-bound side of the 401. Head west for about 15 minutes.
4. Take exit 593 for Country Road 4. Turn right onto Country Road 4 after the exit, heading north. From here it is about 30 minutes to Tamworth.
5. In Tamworth, continue straight until you reach Bridge Street E. Turn left.
6. Turn right on Concession Street N, and head north, out of Tamworth.
7. The field site is about 10 minutes from Tamworth, on your right, just after Thompson Hill Road and before the bridge over the Salmon River.

## III. Accommodation

It is recommended that all participants stay in Kingston for the duration of the course. Please contact Heather Hill at [heather.hill@queensu.ca](mailto:heather.hill@queensu.ca) for questions regarding preferred rates for local accommodations.

## IV. Schedule Overview

Each day will start at 7:30 am and finish at approximately 7:00 pm. There will be a short lunch break each day, as well as morning and afternoon snacks. We will endeavour to finish at 4:00 pm on the last day, returning to campus for 5:00 pm.

## V. Food

A bagged lunch as well as morning and afternoon snacks will be provided each day. All dietary restrictions indicated on the registration forms will be accommodated. Participants are responsible for breakfast and dinner each day, and may want to bring additional snacks and beverages.

## Safety and Preparation

### i) Safety

An electronic acknowledgement of risk form will be made available prior to the course. All participants must complete this before taking part in the course. Participants must bring their own steel-toed boots, hard hats, work gloves and safety glasses for the week, and will not be permitted to participate without them. All other necessary safety equipment will be provided, though you are welcome to bring your own safety vest if you prefer.

### ii) Packing List

Please arrive each day prepared with the following:

- Steel-toed boots
- Work gloves
- Safety glasses
- Hard hat (please bring one if you have one available, we will have 4---5 for temporary use)
- Safety vest (optional)
- Sunscreen
- Insect repellent
- Water bottle
- Sunhat
- Sunglasses
- Pen or pencil

### **Packing List - Continued**

- Field notebook or clipboard
- Calculator
- Rain jacket
- Extra warm layers
- Any personal medications
- Snacks

### **Academics**

#### **i) Curriculum**

The course curriculum is available online at:

<http://www.waterresearchcentre.ca/hydrogeology-field-course.html>

#### **ii) Lectures and Readings**

Online lectures will be made available electronically on August 15, 2017 and readings will be sent out on August 9, 2017. Please review these prior to the start of the course.

#### **iii) Assignment Overview**

Students will be required to complete a project analyzing data collected during the week in the field. This exercise is optional for industry participants. The assignment will consist of three parts, submitted and marked separately. The topics for each section are given as follows:

1. Fracture mapping, core logging, borehole geophysics
2. Constant head tests, slug tests, pulse interference tests
3. Pumping tests, tracer experiments