**Civil**

**And**

**Mineral**

**Practicals**



**INFORMATION FOR CME358 - 2019**

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All civil & mineral engineering students are required to attend a two-week survey camp at the University’s Gull Lake property near Minden, Ontario. This is normally done during the summer between second and third year. Due to the fact that the camp facilities cannot physically handle the entire combined civil & mineral engineering classes, the classes will be split and two camps will be held.

|  |  |  |
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| **2019** | **Starts on** | **Ends on** |
| **Camp 1** | Sunday August 4th | Saturday August 17th |
| **Camp 2** | Sunday August 18th  | Saturday August 31st |

Because the camps will be operating at capacity, **NO** changes to camp choices will be considered after registration. *If you attempt to go to a camp to which you were not registered, you will not be allowed to participate and will be asked to leave.*

# COST & PAYMENT + HEALTH & DIET INFORMATION

There is no additional tuition fee for the camp, which is part of your regular program of study, but students are required to reside at the camp. The cost of lodging, which is rented from the University, and food, which is provided by an outside caterer, will be **$800.00** per person for the two-week period of camp. An additional **$11.00** will be charged for the field book that you use at camp.

All students must register for camp and submit their payment **online.** Registration will be open from April 8th to May 3rd. The only acceptable form of payment is credit card. To register, eligible students must visit the Survey Camp registration web page at: <http://civmin.utoronto.ca/cme-358-course-registration/> and complete the online form.

*Please note that if you do not register and pay by the due date then* ***you will not be allowed to attend camp****.*

For your own safety, when you register for camp, you will be required to complete a personal health form. Completion of this form is part of the registration process and is required so that the camp instructors will be aware of any health or dietary issues that may affect you while you are at camp. You will also be asked for your height in cm. This is so that the instructors can establish the groups that will be working together by height. All information on the form is considered **Personal and Confidential** and will only be used (if necessary) for the duration of the camp.

#  TRANSPORTATION & TIMES

Students must arrange for their own transportation to camp. (Civil Club will arrange a bus for a separate fee and notify you of registration at a later date). Note that there is no public bus service to Gull Lake from Minden and only limited service to Minden from Toronto. Minden is on Highway 35, roughly 200 km northeast of Toronto. The camp is at the end of an 800 m long access road on the south side of Deep Bay Road (also known as County Road 2), approximately 8 km west of Minden. A “University of Toronto Camp” sign marks the turnoff to the access road, which is called “U of T Survey Camp Drive”. Maps of the local area and south-central Ontario are available on the Civil & Mineral Engineering Department’s web site (see Section 6) to assist students in locating the camp. Each person who brings a car will be expected to:

* park the car in the designated parking area
* be especially careful when driving on the narrow roads in and around the camp
* provide the license number and description of the car at the orientation meeting on the first day

Sunday is the first day of camp.

* You should arrive between 2 PM and 5 PM.
* Supper will be served at 5:30. Kitchen closes at 6:30 sharp.
* The canoe safety briefing will begin at 6:45PM. You CANNOT go canoeing if you do not attend the safety briefing.
* The **mandatory** CAMP instructional program begins with an introductory briefing at 7:45PM in the Schoolhouse.

CAMP is a fourteen-day course starting with the introductory ½ day Sunday as above. You will complete three 4-day rotations, with a day off after the second rotation ie. the second Tuesday of each camp. On that day off, only two meals will be served: brunch around 11AM and supper at the usual time.

You will have a short exam at the end of each survey rotation, and a project submission and presentation on the last day of the systems rotation. Exams will be **“Type X”** (open book) with a **non-programmable calculator** permitted under the rules in the Faculty calendar. The survey examinations will cover all of the exercises, the equipment used in carrying them out, and possibly other problems that can be solved by methods closely related to those used for the camp exercises. In addition, a practical examination based on the use of the survey instruments will be given to all students during their second survey rotation.

# COURSE DESCRIPTION

The two camps will likely include most of the following tasks:

* Basic introduction to surveying (history, angles, differential leveling, instrument set-up)
* Establish the elevations of points relative to known benchmarks
* Measure and adjust a closed traverse
* Road alignment and excavation measurements (slope staking, volume calculations)
* Draw a contour map and a highway layout plan based on your own measured data
* Energy systems (solar, wind, and geotechnical exercises)
* Water systems (lake, stream, and hydrology exercises)
* Systems project and presentation
* Final Examinations (written and practical)

Groups of three (or four) members (called survey parties) will be established by camp staff. The surveying instruments will include electronic total stations and automatic levels. Refer to the **FAQ** on the Departmental web site for more information.

# WHAT TO BRING

A flashlight is highly recommended for walking around the camp at night. It gets very dark there.

## Personal items

Figure 1: Water Shoes

The student sleeping quarters at camp are dormitory style with cots or bunk beds with mattresses (no bedding is provided). Thus, each student must bring their own towels, a sleeping bag, and a pillow. A bed sheet may prove useful on very warm nights, which often occur in August. Cold weather is also possible and we have occasionally had temperatures near freezing at night. The work is largely out-of-doors and the weather is unpredictable, so bring clothing for both warm and cool weather. What is certain is that it will rain, so bring rain wear. It is strongly suggested that you bring **all** of the following: ball cap or other hat, umbrella, rain jacket and rain pants (or rain coat). The umbrella will be **very** useful to keep both yourself and your field notes and instruments dry. We also strongly suggest adequate (i.e. both warm and dry) footwear such as hiking boots, heavy sneakers or similarly sturdy shoes suitable for walking through brush, which can get very wet. Open-toed footwear (sandals or flip-flops) are not appropriate for field work. **Water shoes** are a must for the stream exercises to protect your feet from sharp objects and prevent you from slipping on the rocks. They can be purchased at Canadian Tire or Walmart, starting at $10. You will also get wet at the stream, so bring clothes that can get wet and then dry quickly.

Insects are usually only a minor nuisance at the camp, except at dawn & dusk when the mosquitoes are plentiful. Sun screen lotion, a hat, and insect repellent containing DEET will make the experience much more pleasant. For additional protection, students who are especially sensitive to insect bites may wish to bring head netting or a bug shirt. If you elect to purchase netted hats or shirts, try to get as fine a screen as possible for enhanced protection but avoid white mesh over the face as this makes it very difficult to see in bright sunlight.

The camp is on a lake and even the slowest parties should have some leisure time, so you might want to bring a bathing suit and the necessary equipment for softball, football, volleyball, Frisbee, or soccer. A ping-pong table with net is available, but please bring your own ping-pong balls and paddles. The Department owns a few canoes that students may sign out at the discretion of the camp teaching staff, provided that they wear life jackets (provided), use the appropriate boat safety kit, and attend a one hour briefing on canoe safety fundamentals. You are encouraged to bring your own life jacket if you have one – be sure that it is certified and in good condition.

A reusable water bottle (not glass) and a travel mug for coffee will be useful. For hygienic reasons, if you bring snacks, you must keep them in a tight metal or plastic container so you don’t attract raccoons, rodents and bugs. There are no refrigeration facilities available to students at the camp.

Minden has a reasonable assortment of stores, including a good supermarket, a Kawartha Dairy ice cream store, an excellent hardware store, a pharmacy, a coin operated laundry, and TD and CIBC banks. There is a pay telephone at the camp that accepts both coins and credit cards, but does not accept incoming calls. Emergency messages can be relayed through the Department of Civil & Mineral Engineering.

## Course work items

For the **course work**, you will need to bring:

|  |  |
| --- | --- |
| **Required** | **Optional** |
| T-square  | large protractor or a flexible curve |
| Erasing shield, Timely template | French curves |
| Engineer's scale | engineering paper |
| 8” set squares | See note in Section 6 about HOBOmobile |
| Mechanical pencil (H lead is recommended) |  |
| Calculator that is OK in the rain and dust |  |
| Water shoes |  |
| Rugged shoes for walking in brush and on hills |  |

Survey field book will be given to you at camp

Drawing paper will be provided, and a few T-squares are available at camp.

Life jackets will be provided for the stream and lake exercises.

As mentioned, an umbrella is **very** useful to keep both notes and equipment dry.

# WHAT NOT TO BRING

All work performed and submitted at survey camp is expected to be the original work of each student. **Do not** bring any materials (field books, drawings, etc.) that have been produced previously at survey camp. The possession of such materials at camp, whether used or not, will be regarded as an academic offence.

NO glass beverage containers are allowed.

# BEFORE ARRIVING AT CAMP

You will be contacted in mid June about a series of short online safety modules that you must complete before arriving at camp. Keep an eye out for it.

Refer to the Camp Rules & Regulations [posted on the website](http://civmin.utoronto.ca/home/programs/courses/cme358h1/).

An updated Safety & Procedures Guide will be [posted on the website](http://civmin.utoronto.ca/home/programs/courses/cme358h1/) by June 1.

Data from our new water level logger can be downloaded directly to your phones or tablets with Bluetooth. If you would like to do this, please download the software at the App Store or Google Play. The App is called: **HOBOmobile**

You can learn the basics about drafting by viewing this video. It will help you in both the highway curve and topographic mapping exercises. Once you have your drafting equipment, give it a try!

<https://youtu.be/CJAMGeHx74o>

Learn about basic canoeing through this short video. Although the video is old, it has expert canoeist demonstrating proper techniques. <http://www.davidstringer.info/canoe/cancanoe1.mpg>

# ADDITIONAL INFORMATION

Copies of this document, maps showing the location of the survey camp, answers to Frequently Asked Questions and a list of Rules & Regulations pertaining to behaviour at camp are available on the departmental web site at <http://civmin.utoronto.ca/home/programs/courses/cme358h1/>