

**INFORMATION FOR CME358 – Civil And Mineral Practicals**

**2016**

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All civil & mineral engineering students are required to attend a two week survey camp at the University’s property on the north shore of Gull Lake, 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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|  | **Starts on** | **Ends on** |
| **Camp 1** | Sunday August 7th | Sunday August 21st |
| **Camp 2** | Sunday August 21st | Sunday September 4th |

Camp assignments will be posted on the Department’s web site in June (see Section 6). Due to the fact that both camps will be operating at maximum capacity, **NO** changes to camp assignments will be considered now, unless there are extremely compelling reasons. If you attempt to go to a camp to which you were not assigned 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 **$775.00** per person in total for the two week period of camp. An additional cost of **$10.00** for the field book used at camp will also be charged.

All students must register for camp and submit their payment **online.** Registration will be open from May 1 to June 1, 2016. The only acceptable form of payment is credit card. To register, eligible students must visit the Survey Camp web page at <http://www.civil.engineering.utoronto.ca/programs/undergraduate/camp.htm>

and click on “Online Enrollment and Payment.” 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. 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. Note that there is no 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 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 immediately upon arrival at camp

The **mandatory** instructional program will begin with an introductory briefing at 7:30pm on the first Sunday of each camp. Dinner will be served Sunday evening before camp begins; if you wish to eat, arrive by 5:00 p.m. Otherwise, you **must** arrive in time for the introductory briefing (students not at the briefing will be penalized). The camp is a twelve-day exercise, Monday through Sunday on both weeks, with no work scheduled for the Sunday in between the two weeks comprising each camp. Note that two meals will be served on the middle Sunday of each camp: brunch and supper.

The final examination will be held on the last Sunday of each two week camp from approximately 9:30 a.m. to 12:00 p.m. It will be **“Type X”** (Open book: A candidate may bring to the examination and use, any books, notes or other printed or written material, without restriction) but you may only use a **non-programmable calculator** permitted under the rules in the Faculty calendar. In addition, a practical examination based on the fieldwork may be given to all students at some point during the camp.

# 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)
* Design project and presentation
* Final Examination

Parties (groups) consisting of three (or four) members will be established by camp staff after the mandatory introductory briefing on the first Sunday evening. The surveying instruments used will include electronic total stations and automatic levels. There are no computers or internet access available at the camp but limited access is available in Minden. Refer to the **FAQ** on the Departmental web site for more information. The final examination 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.

# WHAT TO BRING

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 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. 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 will make the experience much more pleasant. For additional protection, students 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. A flashlight is highly recommended for walking at night. It gets very dark there.

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, use the appropriate boat safety kit, and attend a one hour briefing on canoe fundamentals.

For the class work, you will need surveying field book (sold at camp – price approximately $10), set squares, French curves, drawing instruments, an engineer's scale (metric), a calculator that you don't mind carrying outside in the rain and dust, and computation paper. You will also need a mechanical pencil (not too soft, H lead is recommended) as all entries in the field book are required to be done in pencil and carefully printed (not written). A programmable calculator is helpful, though not essential, for the mapping exercise. If you have a large protractor or a flexible curve, bring it, but these are not essential items. Each party will need a T-square or a long straight edge. Drawing boards and drawing paper will be provided for your use, and a few T-squares are available at camp. As mentioned, an umbrella is **very** useful to keep both notes and equipment dry.

For hygienic reasons, if you bring food for snacks it must **not** be home made and you must keep it in a tight metal or plastic container to not attract rodents and bugs. There are no refrigeration facilities available to students at the camp. A reusable water bottle and a travel mug will be useful. The camp is in the country, so there are mice, squirrels, and other small animals; if you want to feed them, do it outside, not by leaving your snacks where animals can help themselves.

Refer to the Camp Rules & Regulations posted on the web site.

Minden has a reasonable assortment of stores, including a good supermarket, an excellent hardware store, 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 Engineering.

# 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.

# 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://www.civil.engineering.utoronto.ca/programs/undergraduate/camp.htm.