

**SC/ENG 2130 3.0 and SC/EATS 2630 3.0
FILED SURVEYS**

Summer 2007

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Course Outline

Generals

This course is a two-week field camp comprising field and office work that will simulate professional practice and engineering concepts.

Students will participate in organizational, planning, scheduling and logistical aspects of field operations, instrument familiarization and testing, establishment of geodetic control, and land boundary, highway and construction surveys. Engineering design principles will be incorporated in planning and conducting field measurements and producing a topographic map of the surveyed area. The basic surveying theory and practical approaches and field observation procedures including accuracy consideration vis-à-vis surveying methods and equipment learnt from “**Fundamentals of Surveying**” (SC/ENG 2120 4.0 & SC/EATS 2620 4.0) will systematically be applied in this field camp. Their experience through the individual laboratory assignments in “**Fundamentals of Surveying**” will organically be integrated. At the end of the course, students will have acquired more knowledge and experience in real life aspects of the profession, gained insight into how difficult field conditions are handled, how social considerations affect the surveying process, and what impact that could have on deadlines, and how their final results are affected by negligence or otherwise, in the field observation stages. They will also learn how “redundant” or additional data taken in the field observation stages could help in preventing costly repetition of the field observations.

Prerequisite

SC/ENG 2120 / SC/EATS 2620: **Fundamentals of Surveying**

Format

Tasks:	Two-week field and office work
Office Place:	PSE 020
Term:	April 28 (Saturday) ~ May 12 (Saturday) 2007
Credits:	3.0
Lectures:	N/A

Textbooks

Anderson, MJ., and E.M. Mikhail (1998): **Surveying – Theory and preactice**. McGraw-Hill, (7th edition), 1998 (**Required**).

Wang, Jian-Guo (2007): **Lecture Slides - Fundamentals of Surveying**, York University, Toronto, 2007.

Reference Books

Cole, G.M. and Harbin, A.L. (2006): **Surveyor Reference Manual**, 4th Edition, Professional Publications, INC, Belmont CA, 2006.

Ghilani, C.D. and Wolf, P.R. (2006), Adjustment Computations: - Spatial Data Analysis, John Wiley & Sons (4th edition), 2006.

Kavanagh, Barry F. (2007): Surveying with Construction Applications, 6th Edition, Prentice Hall, 2007.

Leick, A. (1995). GPS Satellite Surveying. John Wiley, New York (2nd Edition).

Schofield, W. (2001): Engineering Surveying, 5th Edition, Elsevier Butterworth-Heinemann, New York, 2001.

US Army Corps of Engineer (1994): Engineering and Design - Topographic Surveying, Engineer Manual 1110-1-1005, Department of the Army, US Army Corps of Engineer, Washington, DC 20314-1000.

Wolf, P.R., and C.D. Ghilani, (2002). Elementary Surveying - An Introduction to Geomatics. Prentice Hall, New Jersey (10th Edition).

Course Director

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Dates and Registration

Field Surveys is scheduled for Saturday, April 28 – Saturday, May 12, 2007.

Students are required to arrive in Engineering Laboratory (PSE020), York University and report to the Camp Director by Saturday, April 28, 2007. The final reports will be due two weeks later.

To attend this course, students must be officially registered in EATS 2630/ENG 2130. Prerequisites for this course are all second year Geomatics Engineering courses or the permission of the faculty head. The registration should be completed through the registrar's office as usual.

Camp Location

The 15-days field practice will take place on Keele campus of York University for planning, pre-analysis and instrument testing and calibrations, the data processing and field observation. For more details please refer to the attached daily schedule.

Fees

There are no additional course fees. Students will have to pay their transportation expenses (partially) and food expenses if additional needs are met.

Transportation

Students must arrange their own travels between the Keele campus and their residence. No extra travels are required.

Clothing and Personal Equipment

The following list of items is considered essential:

- (1). Clothing and personal articles for field work.
- (2). Hat, sunglasses or other sun protection.
- (3). Adequate footwear for field use.
- (4). Sunscreen, insect repellent.
- (5). Wet and cold weather protection – a good waterproof jacket or coat.
- (6). Drinking water.
- (7). Electronic calculator.
- (8). Usual drawing/writing equipment, scales (field books, recording sheets etc.).

Students may need to inquire about the weather of GTA and should be able to prepare to cope with the weather.

Medical, Hospital and Ambulance Coverage

Students are advised that it is their own responsibility to ensure that they are adequately insured against medical, hospital and ambulance costs in the event of sickness or accident. The York University and the Faculty of Science and Engineering cannot be held responsible for any such costs, which might be incurred during the survey camp period. All students attending camp, especially those not officially resident within the province of Ontario, should carefully check with the appropriate authorities to be sure that they are adequately covered.

Personal Aspects

If you anticipate any difficulties for any religious, medical, or other reasons in participating in the normal course schedule, or if for whatever reasons you have special requirements regarding meals, please contact the Camp director well in advance.

Safety

No Job is so important and no service so urgent that we cannot take time to perform our work safely. The following is not intended to be an all-inclusive capsule of safety requirements.

1. Students comply with all safety regulations, policies of York University.
2. Wear personal protective equipment in all designated areas or when otherwise directed to do so.
3. Immediately report to Camp Director if any safety incident occurs or may occur.
4. Each individual at Camp has the responsibility and obligation to the other group members to work safely. If one sees another one perform an unsafe act, they should call this to the other person's attention, whether the unsafe act affects only the individual or the whole team.
5. The equipment used at Camp has the potential to become very hazardous objects and must be properly secured for travel.
6. The survey instruments used at Camp should be protected from any potential damage.

Grade System

≥90%	A+
80-89%	A
75-79%	B+
70-74%	B
65-69%	C+
60-64%	C
55-59%	D+
50-54%	D
40-49%	E
<39%	F

Assessment

Preparation:	10%
Topographic Control Surveying	
Field Work:	15%
Office work:	10%
Topographic Mapping	
Field Work:	15%
Office Work:	10%
Report:	25%
Overall Participation:	15%

Any student, who is absent for any reasons from the camp either for 5 studying days or equivalent with the accumulated absent hours in total, will automatically fail from passing this course.