



**I. COURSE DESCRIPTION:**

This course will introduce you to basic surveying principles. The topics will deal with theory, application and care of the level, chain and transit. The theory is enhanced with practical field exercises.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the student will demonstrate the ability to:

1. Explain the purpose of surveying by identifying various types of surveys; describing equipment used to perform such surveys; and indicate the interaction of errors, mistakes and field data collection in a survey

Potential Elements of the Performance:

- Define surveying.
- Identify types and purpose of surveying.
- Identify the basic instruments commonly used in surveying.
- Distinguish between accuracy and precision.
- Define errors and mistakes in surveying.
- Recognize and appreciate the importance of collecting and recording appropriate field notes.

2. Participate as an active member of a survey team to select and operate leveling survey equipment for the purpose of conducting, measuring, calculating, recording and disseminating data according to given standards.

Potential Elements of the Performance:

- Define leveling.
- Identify leveling instruments and their use.
- Identify and use leveling rods and accessories.
- Describe the process of differential leveling.
- Identify and use the two basic equations of leveling.
- Demonstrate the proper procedure for setting up the level, taking rod readings, and entering data in the field book.
- Record and reduce field notes to established standards.
- Solve problems involving the degree of accuracy
- Perform with the help of a survey crew (three students) a field exercise using single instrument set up.
- Solve and perform a *differential leveling* exercise.
- Solve and perform a *benchmark leveling* exercise.

- Solve and perform a *profile leveling* exercise.
  - Solve and perform a *peg test* to ensure proper adjustment of instrument.
3. Acquire, record and reduce linear measurements using various Approved techniques, equipment and procedures.

Potential Elements of the Performance:

- Differentiate among different methods of linear measurement.
  - Establish a personal pace.
  - Explain the duties of the head surveyor and rear surveyor.
  - Explain the various uses for tape accessories.
  - State the procedure for making slope measurements.
  - Measure distances using a steel chain.
  - List the sources of chaining mistakes.
  - Convert slope distances into horizontal distances.
  - Compute incorrect tape length effects on chaining.
  - Compute temperature effects on chaining.
4. Identify and describe the functions and parts of a transit; measure and record angular measurements with the transit; perform associated angular calculations for azimuths and bearings of open and closed traverses.

Potential Elements of the Performance:

- Identify the components of a transit.
- Set up a transit over a point.
- Demonstrate the procedure for making angular measurements.
- Read transit verniers.
- Measure horizontal angles singly and doubly.
- Perform angular arithmetic calculations.
- Calculate bearing and azimuths of open and closed traverses.
- Describe and outline the procedure for prolonging a straight line, interlining between two points, intersecting a line and prolonging a straight line past an obstacle.

**III. TOPICS:**

1. Introduction and Surveying Fundamentals
2. Leveling
3. Linear Measurement
4. Engineer's Transit

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

- WebCT Study Guide

**SUGGESTED RESOURCE/TEXT/MATERIALS:**

- Surveying with Construction Applications  
Barry F. Kavanagh

**V. EVALUATION PROCESS/GRADING SYSTEM:**

You will be assigned a final grade based on successful completion of assignments, quizzes, field work and tests, weighted as follows:

Assignments	10%
Quizzes	10%
Field Book and Participation	20%
Midterm Test	30%
Final Test	<u>30%</u>
<b>TOTAL</b>	<b>100%</b>

Each assignment and quiz carries equal weight. Late submittals receive only a maximum grade of 50%. However, assignments handed in later than one week will receive a grade of 0%.

An average of 50% on assignments/field book, and 50% on tests is required for successful completion of this course

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 - 59%	1.00
F (Fail)	49% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	

S	Satisfactory achievement in field/clinical placement or non-graded subject areas.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject areas.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

## VI. SPECIAL NOTES:

### Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 703 so that support services can be arranged for you.

### Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

### Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

## **VII. *ACADEMIC / CLASSROOM CONDUCT***

Introduction: Sault College students, faculty members, employees and Ray Lawson Hall Residents constitute an academic community committed to training and education that will enhance effectiveness in the workplace and quality of life. The College community expects all members to discipline themselves, individually and collectively, and it requires adherence to the standards of conduct appropriate for an academic community.

Sault College considers its students adults and as such obligated to make responsible decisions. The Student Code of Conduct exists to assist in the effort of providing the best possible learning and living environment for all students. It is the obligation of students to treat all other members of the academic community with dignity and respect – including other students, faculty members, employees, visitors and neighbors of the College.

The enforcement of the Student Code of Conduct is critical to the existence of such an environment for all members of the academic community. Ignorance of the rules or of the law is not a defense against disciplinary action. The College reserves all rights to criminal action where it deems necessary. Lack of intention to violate College policy will not generally excuse an infraction

### Academic Dishonesty:

Students shall submit written or other work in a course that shall be the product of their own efforts. "Academic Dishonesty" includes, but is not limited to, the following:

- a. Copying from another student's paper.
- b. Using material not authorized by the person administering the test or assignment.
- c. Collaborating with another student during a test without permission.
- d. Plagiarism (i.e. representing the work of another, as one's own, inclusive of purchases of a commercial nature).
- e. Collusion (i.e. obtaining from or giving to another student unauthorized assistance in course work).
- f. Falsification (i.e. modification, without authorization, of any examination paper, record, assignment, or report).
- g. Knowingly using, buying, selling, stealing, or soliciting contents of a test, examination paper, record, assignment, or report.
- h. Representing oneself as another student for the purpose of taking a test or examination or allowing oneself to be represented by another for the same

Academic Dishonesty Cont'd:

- i. Attempting to bribe or otherwise coerce a professor/instructor to obtain favours.
- j. Cheating (i.e. any misrepresentation by a student of their performance in a College subject for the purpose of obtaining credit to which they are not entitled).
- k. Any act designated by the President or his/her designate.  
(Student Code of Conduct – Article 2, Section 2)

Attendance:

Students are expected to attend 100% of their classes. Attendance will be recorded within the first 15 minutes of each class.

Leaving or Entering During Class:

Students should exercise respect for faculty and students when leaving or entering a class that is already in session. Leaving or entering should be done with a minimal amount of interruption.

Disruption:

Students shall not obstruct or disrupt, or attempt to obstruct or disrupt, teaching, administration, disciplinary procedures, or other College activities.

(Student Code of Conduct – Article 2, Section 9)

Use of Electronic Devices:

*General:* Taking photos or making audio/video recordings on Sault College property without permission in ANY context in which the person being photographed or recorded has a reasonable expectation of privacy is prohibited. Examples include but are not limited to:

*Classrooms:* The use of cell phones, photographically capable cell phones, pagers and other communication/electronic devices during classes, clinical or field placement is prohibited unless authorized by faculty.

*Examinations:* The use of cell phones, photographically capable cell phones, pagers and other communication/electronic devices during exams and midterms is prohibited unless authorized by faculty in charge.

(Student Code of Conduct – Article 2, Section 31)

## **SANCTIONS**

College staff may impose sanctions in accordance with their responsibilities. Sanctions, which are imposed, may become part of the student's official record and are removed one year and one term after the student's last academic activity at Sault College.

The College shall make sanctions concerning students' actions and offences occurring within or affecting people on Sault College owned or controlled property, including but not limited to Ray Lawson Hall Residence, Sault College Aviation Hangar, off-campus at a College-sponsored event, or when such actions or offences at a non-College event off-campus have a direct impact on students' on-campus. The College reserves the right to assess any sanction it may deem appropriate. A serious breach or continuation or a repetition of behavior in violation of the Student Code of Conduct will be cause for further sanctions up to and including expulsion.

### **Sanctions for Academic Dishonesty may include the following:**

1. A professor/instructor may assign a sanction as defined below, or make recommendations to the Dean for disposition of the matter. The professor/instructor may:
  - issue a verbal reprimand
  - make an assignment of a lower grade with explanation
  - require additional Academic assignments and issue a lower grade upon completion, to the maximum grade "C"
  - make an automatic assignment of a failing grade
  - recommend to the Dean, dismissal from the course with the assignment of a failing grade recommend to the Dean, dismissal from the College for a definite or indefinite period of time with a failing grade.
2. If the student denies the allegation of academic dishonesty the student should discuss the matter with the Director of Student Services immediately. If the matter cannot be resolved the student should file an Academic Appeal within three (3) working days. The appeal would automatically move to Step Two – Academic Appeal.

(Student Code of Conduct – Article 4)



Testing Absence

If a student is unable to write a test for medical reasons on the date assigned, the following procedure is required:

- In the event of an emergency on the day of a test, the student must telephone the College to identify the absence. The college has a 24-hour electronic voice mail system (759-2554) Ext. 2600. Documentation may be required to support the absence.
- The student shall provide the Professor with advance notice preferably in writing or e-mail of his/her need to miss the test.
- The student may be required to document the absence at the discretion of the Professor.
- All decisions regarding whether tests shall be re-scheduled will be at the discretion of the Professor.
- The student is responsible to make arrangements, immediately upon their return to the College with their course Professor in order to make-up the missed test prior to the next scheduled class for the course in question.

**VIII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult with the professor and the college's academic counsellors. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

**IX. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.