


SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: SURVEYING  
Code No.: BUR 101-4  
Program: CIVIL ENGINEERING AND ARCHITECTURAL  
Semester:  
Date: SEPTEMBER, 1986  
Author: W.R. DAVIES

New: Revision: X

APPROVED:   
Chairperson ^ Date

SURVEYING

SUR 101-4

Course Name

Course Number

PHILOSOPHY/GOALS;

The objective of this course is to develop a basic knowledge of surveying. The students will learn the use and care of instruments, i.e., transits, levels and chains.

METHOD OF ASSESSMENT (GRADING METHOD):

Mid Term Examination	40%
Final Examination	60%

OBJECTIVES;

The student, in order to complete the course must be able to:

1. Care for and maintain transits.
2. Care for and maintain levels.
3. Care for and maintain chains.
4. Identify the parts of a transit.
5. Identify the parts of a level.
6. Read the vernier scales on any transit.
7. Measure an angle in the field by means of a transit.
8. Measure a field angle by doubling same with aid of transit.
9. Lay out a trasverse and measure same.
10. Measure courses with different types of chains.
11. Set up standard surveyor's field book.
12. Record survey notes for a measured transverse.
13. Convert slope distances to horizontal distances.
14. Identify between errors and mistakes.
15. Correct chainage distances for temperature differences.
16. Identify a B.N. and be able to obtain the elevation from recorded data.
17. Transfer grades.
18. Carry a set of elevations from one point to another.
19. Establish B.M.'s and
20. Record levelling notes.

TEXTBOOK;

Surveying notes by Sault College Engineering Department

REFERENCE TESTS;

Simplified Site Engineering - Parker and McGuire

Surveying, Theory and Practice - Davis and Foote

Elementary Surveying (Vol I and II) -Breed and Hosraer

Engineering Surveys (Elementary) - Rubel, Lommel and Todd

Surveying - Bouchard and Moffit

Highway Curves - Ives

Surveying Practice ;2 The Fundamentals of Surveying - Kissam

Principles of Surveying - Herubin

CIVIL ENGINEERING TECHNICIAN

SUR 101-4

Topic No.	Periods	Topic Information
		<u>General</u> <ul style="list-style-type: none"><li>- Introduction</li><li>- Definition of Surveying and factors controlling surveying</li><li>- Types, kinds and purpose of surveys</li></ul>
		<u>Fundamental Principles of Surveying</u> <ul style="list-style-type: none"><li>- Plane and Geodetic surveying</li><li>- Safety precaution</li><li>- Theory of Notekeeping</li><li>- Errors and mistakes - general</li></ul>
		<u>Levelling Instrument</u> <ul style="list-style-type: none"><li>- Types of levelling instrument</li><li>- Level rods and accessories</li><li>- Care of levelling instruments</li></ul>
12		<u>Levelling</u> <ul style="list-style-type: none"><li>- Introduction to levelling</li><li>- Theory of Levelling</li><li>- Terms and definition</li><li>- Datum planes and bench marks</li><li>- Methods of measuring differences in elevation</li><li>- Levelling procedure</li><li>- Notekeeping</li><li>- Reduction of level notes</li><li>- Sources of error</li><li>- Distribution of error</li></ul>
8		<u>Transits</u> <ul style="list-style-type: none"><li>- Basic principals</li><li>- Types of Transits and general application</li><li>- Use of transit</li><li>- Care of transit</li><li>- Sources of error</li></ul>
8		<u>Angular Measurement</u> <ul style="list-style-type: none"><li>- Definition</li><li>- Basic computations involving angles</li><li>- Verniers</li><li>- Measure angles with transit</li><li>- Double angles with a transit</li></ul>

Topic No.	Periods	Topic Information
		<p data-bbox="672 506 935 533"><u>Linear Measure</u></p> <ul data-bbox="672 541 1484 825" style="list-style-type: none"><li>• Terms and definitions</li><li>• Units of linear measurement</li><li>- Methods of measuring distances</li><li>• Steel tapes</li><li>• Chaining Methods</li><li>• Notekeeping</li><li>• Care and Maintenance of chaining equipment</li><li>• Temperature affects on chaining</li></ul>

CIVIL ENGINEERING TECHNICIAN

Exercise No.	Field Exercises Periods	Exercise Information
1	2	Chaining - level ground
2	2	Chaining - sloping ground
3	1	Setting up transit over point
4	2	Reading angles - use of vernier
5	6	Traverse chaining and transit
6	2	Prolonging a straight line
7	2	Interlining
8	4	Topographic survey via stadia
9	2	Levelling set bench marks