

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: SURVEYING
Code No.: SUR 235-3
Program: CIVIL ENGINEERING
Semester: II
Date: JUNE , 1983
Author: W.B. SPROULE

New:

Revision:

APPROVED:

Chairperson //

Date

7. OV'P- /

SURVEYING
Course Name

SUR 235-3
course Number

PHILOSOPHY/GOALS:

The object of this course is to formulate survey problems and to relate them to actual field work and drafting room techniques. Levelling practices, profiles and cross section works will be dealt with along with planimeter for determining areas and volumes. Bearings and azimuths conversion, latitudes and departures along with areas by D.M.D.' s will be studied.

METHOD OF ASSESSMENT (GRADING METHOD):

Tests	55%
Field Book	10%
Projects	23%
Assessment by Instructor	12%

TEXTBOOK(S):

Survey notes by Sault College Engineering Dept.

REFERENCE TEXTS:

Simplified Site Engineering Parker and McGuire

Surveying, Theory and Practice Davis and Foote

Elementary Surveying (Vol I and II) Breed and Hosmer

Engineering Surveys (Elementary) Rubel, Lommel and Todd

Surveying Bouchard and Moffit

Highway Curves Ives

Surveying Practice - The Fundamentals of Surveying by Kissam

Principles of Surveying Herubin

The student, on completion of this course must be able to:

1. Set grades and B.M.'s in the field.
2. Deduce level notes.
3. Record field level notes and notes for profiles.
4. Plot profiles.
5. Determine areas of cross section via end area method.
6. Determine areas of cross section via planimeters.
7. Set sewer grades.
8. Design and plan layout drainage schemes.
9. Determine survey requirements for borrow pit excavations.
10. Plot contour lines
11. Determine contours from points of known elevation.
12. Conduct a topographic survey.
13. Using field notes, draw a topographic map.
14. Determine azimuths, bearings and co-ordinates.
15. Determine areas by D.M.D.'s.

<u>Topic No.</u>	<u>Periods</u>	<u>Information</u>
1	8	- Theory of levelling - Terms and definitions - Differential levelling - Note Keeping - Setting elevations
2	2	<u>Levelling Instruments</u> - Types of levelling instruments - Levelling work accessories - Levelling using different levels
3	6	<u>Profile Levelling</u> - Decipher levelling notes - Plotting profiles
4	4	<u>Grade Work Levelling</u> - Setting sewer grades - Setting ditch grades, sidewalk etc.
5	4	<u>Grade Line Problems</u> - Range of grade % - Intersecting grade lines
6	4	<u>Construction Surveys</u> - Layout of grade lines for roads - Layout of grade lines for sewers, ditch and etc.

Contours

- Interpolation
- Plotting

Earthwork

- Cross sections of pits
- Computations of volumes

Angular Measure

- Azimuth, bearings
- Bearings from field angles

FIELD EXERCISES

ENGINEERING TECHNICIAN

<u>Exercise No.</u>	<u>Periods</u>	<u>Context</u>
1	3	Differential Levelling
2	4	Setting B.N.'s, Profiles
3	3	Street survey, plan & profile
4	4	Sewer grades, preliminary, design and layout
5	2	Topographic surveying
6	2	Cross sections, volumes