SAULT COLLEGE

of APPLIED ARTS AND TECHNOLOGY

Sault Ste Marie,

Ontario.

COURSE OUTLINE

SURVEYING SUR 235-3

Civil 11

revised June 1981

#### SURVEYING

TEXTt. Surveying Notes by Sault College Engineering Dept.

### References

Simplified Site Engineering Parker and McGuire
Surveying, Theory and Practice Davis and Foote
Elementary Surveying (Vol 1-and 11) Breed and Hesmer
Engineering Surveys (Elementary) Rubel, Lommel and Todd
Surveying Bouchard and Moffit

Highway Curves Ives

Surveying Practice - The Fundenentals of Surveying by Ki-«sam Principles of Surveying Herubin

### CIVIL ENGINEERING TECHNICIAN

CE 11

-Performance Objectives for Surveying --

### SUR 235-3

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

Hie 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 marked.
- 6, Determine areas of cross section via planimeters.
- 7, Set sewer grades.
- 8, Design and plan and layout drainage schemes.
- 9, Determine survey requirements for borrow pit excavations,

/ox-3:2C Plot contour lines.

Determine contours from points of known elevation.

Conduct a topographic survey.

Using field notes> draw a topographic map.

- /<? , Deter/fnine azimuths, bearings and co-ordinates,
- 13" , Determine areas by D.M.D.'s,

### SURVEYING ^

- theory of levelling - terms and definitions -differential levelling -notekeeping -setting elevations Levelling Instruments -types of levelling instruments -levelling work accessories -leveling using different levels  6  Profile Jjevelling -decipher levelling notes -plotting profiles  h-  4  Grade Work Levelling -setting sewer grades -setting ditch grades , sidewalk e	
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-setting sewer grades	
-setting ditch grades , sidewalk e	
	etc.
5« ii Srade Line Problems	
-rate of grade % -	
intersecting grade lines	
6. $h$ Construction Surveys	
-layout of grade lines for roads'	
- " " " " sewers, &et	ditc: cc.
7. <u>Contours</u>	
-interpolation	
-plotting	
8. $h$ Earthwork -cross sections of pits	
-computations of volumes	
-Angular Measure -azmith, bearings, -bearings from field angles*	

# Field Exercises suR :??5-3

# Architectural Engineering Technician

Exercise No	Periods	Context
1	3	-differential levelling
2		-setting B.M.'s, Profiles
3	3	-street survey, plan 4 profile
		-sewer grades, prelim,design, Alayout
5.	2	-topographic surveying
6.	2	-cross sections, volumes

# Field Exercises SUR\_235=3-

# ^a(iSle6^^sasAp^S^ Engineering Technician

Exercise No	Periods	Context
1	3	-differential levelling
2	4	-setting B.M.'s, Profiles
3	3	-street survey, plan 4 profile
*	*	-sewer grades, prelim,design, Alayout
	2	-
5*		-topographic surveying
	2	*
6.		-cross sections, volumes