

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

COURSE OUTLINE

Course Title: STRUCTURAL GEOLOGY

Code No.: GEO 277-4

Program: GEOLOGICAL ENGINEERING TECHNICIAN

Semester: III

Date: OCTOBER 3, 1985

Author: MANFRED ENGEL

New: \_\_\_\_\_ Revision: X

APPROVED:

  
Chairperson

Oct 10/85  
Date

CALENDAR DESCRIPTION

STRUCTURAL GEOLOGY

GEO 277-4

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COURSE NAME

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COURSE NUMBER

PHILOSOPHY/GOALS: The general objectives of the course are as follows:

1. To cause the student to visualize geological structures in three dimensions.
2. To teach the student the necessary graphical techniques and methods related to descriptive geometry. To describe, measure, plot and reconstruct certain geological structures.
3. To teach the student to relate geological structures on maps to the shape and size of structures at depth.

METHOD OF ASSESSMENT (GRADING METHOD):

Four written tests:

True and apparent dip	15%
Depth and thickness determinations	15%
Outcrop patterns	15%
Faults	15%

Lab book with approximately 30 plates 40%

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100%

TEXTBOOK(S):

Dennison - Geological Structures

STRUCTURAL GEOLOGY...3

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE
1	8	<u>True and Apparent Dips</u> <ul style="list-style-type: none"> <li>- terminology</li> <li>- graphical methods of finding true dip from two apparent dips, and apparent dip from true dip</li> <li>- trigonometric methods of finding true dip from two apparent dips</li> <li>- use of alignment diagrams</li> <li>- practical exercises</li> </ul>	
2	4	<u>Structure Sections</u> <ul style="list-style-type: none"> <li>- terminology</li> <li>- basic construction of structure sections</li> <li>- vertical exaggeration of scale</li> <li>- alteration of horizontal scale</li> <li>- practical exercises</li> </ul>	
3	8	<u>Thickness Determinations</u> <ul style="list-style-type: none"> <li>- terminology</li> <li>- solutions for simple cases</li> <li>- horizontal beds and vertical beds</li> <li>- traverse perpendicular to strike of dipping beds</li> <li>- practical exercises</li> </ul>	
4	8	<u>Depth to Dipping Strata</u> <ul style="list-style-type: none"> <li>- depth to planar units</li> <li>- strata with changing dip</li> <li>- use of nomogram for calculating depth to strata</li> <li>- bed thickness in a well</li> <li>- distance along inclined hole</li> <li>- practical exercises</li> </ul>	
5	8	<u>Outcrop Patterns and Three-Point Problems</u> <ul style="list-style-type: none"> <li>- rule of the V's</li> <li>- three-point problem</li> <li>- plotting outcrop patterns</li> <li>- practical exercises</li> </ul>	

STRUCTURAL GEOLOGY...4

TOPIC NO.	PERIODS	TOPIC DESCRIPTION	REFERENCE
6	4	<u>Folds</u> - terminology - geometrical reconstruction of folds - practical exercises	
7	8	<u>Faults</u> - terminology - apparent and actual fault movements - intersection of a fault and a plane - net slip and rotation - practical exercises	
8	4	<u>Stereographic Projections</u> - principles - types of projections - Smith and Wolff Net	
	8	TESTS	
TOTAL	60 Hours		