

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

COURSE OUTLINE

Course Title: MINERALOGY AND PETROLOGY I
Code No.: GEO 113-3
Program: GEOLOGICAL ENGINEERING TECHNICIAN
Semester: I
Date: JANUARY, 1987
Author: J. GIGUERE

New: _____ Revision: X

APPROVED:


Chairperson

Feb 17 1987
Date

CALENDAR DESCRIPTION

MINERALOGY AND PETROLOGY

GEO 113-3

Course Name

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PHILOSOPHY/GOALS:

This is a first course in mineral and rock identification. This course outlines the systematic approach through the practical application of mineral identification. Also introduced are Igneous, Metamorphic and Sedimentary rocks with emphasis on Igneous rocks.

METHOD OF ASSESSMENT (GRADING METHOD):

Theory tests	50%
Laboratory tests	20%
Laboratory assignments	30%

Late assignments will be considered only for valid reasons (medical, etc.).

A supplemental exam will be available at the end of the semester to students who have an average grade between 50% and 60%.

Pass grade is 60%.

Below 60% is a failure.

TEXTBOOKS:

1. Manual of Mineralogy: 20th edition after J.D. Dana by Klein and Hurlbut.

TOPIC NO.	PERIODS	TOPIC INFORMATION
5		<u>The Igneous Rocks</u> - magnetic theory - fine grained and coarse grained rock (volcanic & plutonic) - textures of Plutonic rocks
6		Bowen's Reaction Series
7		The Classification of Igneous Rock
8		The Clan Concept of Igneous Rock Classification
9		Identification of Common Plutonic Rocks and Textures of Plutonic Rock in Hand Specimen

MINERALOGY & PETROLOGY

TOPIC NO.	TOPIC INFORMATION
1	INTRODUCTION <ul style="list-style-type: none">- Definitions of basis terms in Mineralogy- History of Mineralogy- Library facilities for mineralogy
2	DESCRIPTIVE MINERALOGY <ul style="list-style-type: none">- Physical Properties<ul style="list-style-type: none">a) hardnessb) breaking propertiesc) magnetismd) specific gravity and densitye) colour and streakf) lustreg) polarization of mineralsh) reflections and refractionsi) growth habitsj) six crystal systems- Associated laboratory testing of physical properties- Identification of minerals through the use of identification chart in the text- The chemical classification of minerals- Sampling procedure and cataloguing of specimens
3	INTRODUCTION TO PETROLOGY <ul style="list-style-type: none">- Definition of basic terms in petrology- History of Petrology and its relationship to mineralogy and geochemistry
4	Petrogenesis of igneous, metamorphic sedimentary and metasomatic rocks.

MINERALS TO BE STUDIED BY STUDENTS

Albite
Almandite
Apatite
Biotite
Calcite
Chalcopyrite
Diopside
Flourite
Galena
Gold
Graphite
Gypsum
Halite
Olivine
Pyrite
Pyrrhotite
Quartz
Sphalerite