

SAULT COLLEGE
of Applied Arts and Technology
Sault Ste. Marie

COURSE OUTLINE

MINERALOGY & PETROLOGY III

GEO 223-4

revised January 1983 by J. Giguere

MINERALOGY AND PETROLOGY

Course Outline

Theory Sessions

<u>Topic No.</u>	<u>Periods</u>	<u>Topic Description</u>	<u>Reference</u>
1		Review of Mineralogy & Petrology	
2		<u>X-Ray Methods</u> -Generation of X-Rays -Diffractometer -The Diffraction Camera -The Bragg equation from the crystal space lattice as a diffraction grating -x-ray Fluorescence -Electron Probe	
3		Mineral Assemblages in Igneous Rock 1-The Granite Rhyolite System 2-The Gabbroic-Basalt System exemplified by proper phase diagrams	
4		Sedimentary Rocks -Review of classification and nomenclature -Sorting analysis -Modality	
5		Metamorphic Rock -Facies concept review -Mineral Assemblages in different facies -Stability factors in metamorphic rock	

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Lab Component

Seven or more Lab Projects to be completed of the following:

<u>Topic No.</u>	<u>Periods</u>	<u>Topic Description</u>	<u>Reference</u>
1		X-Ray diffraction (Identification of an unknown)	
2		Refractive Index Identification of Volcanic aphanites	
3		Sieve Analysis of a sediment to determine Modaligy, sorting and mean value, standard deviation	
4		Preparation and staining identification of calcite in mixed limestone	
5		Identification and logging of oil type drill samples	
6		Photograph rock structure and fabrice by photomicrographic techniques	
7		Quantitative determination of the component of a limestone using X-ray, diffraction	
8		Determination of plagiocluse feldspars in several thin sections	
9		Option of students choice with approval of the teacher.	
10		Preparation of a polished section for hardness testing.	

Other Lab Work:

Identy fraction of Igneous, Sedimentary and Metamorphic Rock with detailed descriptions.

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GRADING

Tests 30% of the grade

Rock Identification 20% of the grade

Labs 50% of grade with each accepted lab assignment worth 5%

Pass Grade 60%

Makeup labs and tests available to students with over 50% but under 60% average at the end of the semester.