

GRANDE PRAIRIE REGIONAL COLLEGE  
DEPARTMENT OF SCIENCE  
COURSE OUTLINE 1994-95

Registrar's Office

GEOLOGY 1020

<u>GEOLOGY 1020:</u>	Physical Geology		
<u>INSTRUCTOR:</u>	Dr. Desh Mittra		
<u>TRANSFER CREDIT:</u>	U. of Alberta	GEOL 202	3 credits
	U. of Calgary	Jr. GLGY	3 credits
	U. of Lethbridge	GEOL 2060	3 credits
	Athabasca Univ.	1/2 GEOL 231	6 credits

**COURSE OBJECTIVES:** The course has been designed to generate competence in the fundamental concepts of earth sciences through the media of lectures, visual aids and integrated practical laboratory and field experiences. Geology 1020 serves both as the introductory course for specialists in Geological Sciences and as a course for non-specialists desirous of obtaining knowledge of the Earth Sciences.

**COURSE OUTLINE:** Lecture Component - M, W, F, at 12:00 - 12:50

Internal structure and composition of earth; continents and oceans; minerals and rocks; ground water and water supply; erosion, transposition and deposition of sediments; igneous activity and metamorphism; mountain building; plate tectonics.

Laboratory Component - T, W & R at 3:00 - 5:50 Room J107

Identification of minerals and common rocks, relative ages, topographic maps, aerial photographs; geological interpretation of topographic maps, aerial photographs and earth satellite images; the occurrence of igneous rocks, sedimentary rock structures, faults, earthquakes and plate tectonics.

**TEXTBOOKS  
AND  
OTHER ITEMS**

Books

1. Physical Geology - Plummer & McGeary
2. Lab Manual, Zumberge & Rutherford
3. Simon and Schester's Guide to Rock's and Minerals or The Audubon Society Field Guide to North American Rocks and Minerals
4. Dictionary of Geological Terms

Materials

1. Steel Knife
2. Set of colored pencils
3. Pencils, eraser, paper

**Note - All books and materials are available at the College Bookstore**

The following approximate schedule of lecture topics is presented as an aid to your study outline:

Week of Sept. 7	Introduction & Course Outline/Field Trip and Slide show - An Introduction to Geology	(Ch. 1)
Week of Sept. 12	Atoms, Elements & Minerals Different types of rocks & their identification	(Ch. 2)
Week of Sept. 19	Weathering sediments and sedimentary rocks	(Ch. 5 & 6)
Week of Sept. 26	Geologic structures, Folds, Faults and unconformities	(Ch. 15)
Week of Oct. 3	Metamorphic rocks and Geologic time	(Chps. 7 & 8)
Week of Oct. 10	Volcanism and Intrusive rocks.	(Ch. 3 & 4)
Week of Oct. 17	Mass wasting streams and landscapes	(Ch. 9 & 10)
Week of Oct. 24	Ground water, glaciers	(Ch. 11 & 12)
Week of Oct. 31	Glaciation, deserts & wind action	(Ch. 12 & 13)
Week of Nov. 7	Waves, beaches and coasts	(Ch. 14)
Week of Nov. 14	Earth quakes & Earth's interior	(Ch. 16 & 17)
Week of Nov. 21	The sea floor	(Ch. 17, 18)
Week of Nov. 28	Plate tectonics	(Ch. 19)
Week of Dec. 5	Mountain belts and crust & Geologic Resources	(Ch. 20 & 21)

Assignments

Eleven assignments will be given during the term. Late submissions will not be marked unless prior permission. Tentative dates are:

Assignment #	Date Given	Due Date
1	Sept. 16	Sept. 23
2	Sept. 23	Sept. 30
3	Sept. 30	Oct. 7
4	Oct. 7	Oct. 14
5	Oct. 14	Oct. 21
6	Oct. 21	Oct. 28
7	Oct. 28	Nov. 4
8	Nov. 4	Nov. 14
9	Nov. 14	Nov. 18
10	Nov. 18	Nov. 25
11	Nov. 25	Dec. 2

FIELD TRIPS

One day field trip (October 1st, 1994 or October 15th) to look at the Geologic formations of the Rockies in Grande Cache coal deposits.  
(Time will be discussed in class.)

**\*Transportation will be provided. Bring your own food and soft drinks.**

EXAMINATION & EVALUATION

i	First Test (Oct. 17, during class)	5%
ii	Second Test (Nov. 21, during class)	10%
iii	Assignments	15%
iv	Weekly Lab	15%
v	Lab Quiz	10%
vi	Lab Final Exam (Nov. 29, 30 & Dec. 1)	10%
vii	Final Written Exam (T.B.A.)	<u>35%</u>
	<b>TOTAL</b>	<b>100%</b>

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## GEOLOGY 1020

### LAB SCHEDULE FALL - 1994

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Sept 6, 7, 8	Ex 1	Introduction to mineral identification and slide show.
Sept 13, 14, 15	Ex 1	Identification of minerals.
Sept 20, 21, 22	Ex 2, 3	Igneous rocks & sed. rocks.
Sept 27, 28, 29	Ex 3, 4	Sedimentary rocks & metamorphic rocks.
Oct 4, 5, 6	Ex 18, 19, 21	Structural geology
Oct 11, 12, 13	Ex 5, 6, 7, 8	Topographic maps, aerial-photo maps
Oct 18, 19, 20	Ex 10 A, B, C	Streams
Oct 25, 26, 27	Ex 11, 12	Ground Water
Nov 1, 2, 3	Ex 13, 14 A, B, C	Glaciers
Nov 8, 9, 10	Ex 15 A, B	Work of wind, desert land forms.
Nov 15, 16, 17	Ex 16 A, B, C	Shoreline
Nov 22, 23, 24	Ex 23 A, B, 24	Plate tectonics
Nov 29, 30	<b>FINAL</b>	<b>LAB EXAM</b>

**NOTE:** If needed labs may be moved around.