GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE
COURSE OUTLINE 1992-93

GEOLOGY 1020

GEOLOGY 1020: Physical Geology

INSTRUCTOR: Dr. Desh Mittra

TRANSFER CREDIT:

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 202 serves both as the introductory course for specialists in Geological Sciences and a s 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 - W & R at 3:00 - 5:50

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 & Rutford
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:

September 2, 1992	Introduction & Course Outline/Field Trip	
Week of Sept. 7	Slide show - An Introduction to Geology Atoms, Elements & Minerals	(Ch. 1) (Ch. 2)
Week of Sept. 14	Volcanism and extrusive rocks	(Ch. 3)
Week of Sept. 21	Intrusive Activity and the Origin of Igneous Rocks	(Ch. 4)
Week of Sept. 28	Weathering and soil sediments and sedimentary rocks	(Chps. 5 & 6)
Week of Oct. 5	Metamorphic rocks and Geologic time	(Chps. 7 & 8)
Week of Oct. 12	Mass wasting	(Ch. 9)
Week of Oct. 19	Streams and landscapes	(Ch. 10)
Week of Oct. 26	Ground water, glaciers	(Ch. 11 & 12)
Week of Nov. 2	Glaciation, deserts & wind action	(Ch. 12 & 13)
Week of Nov. 9	Waves, beaches and coasts	(Ch. 14)
Week of Nov. 16	Geologic structures, earth quakes	(Ch. 15 & 16)
Week of Nov. 23	Earth's interior, the sea floor	(Ch. 17, 18)
Week of Dec. 2	Plate tectonics, mountain belts and crust	(Ch. 19 & 20)

Assignments

Twelve 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. 2
8	Nov. 2	Nov. 9
9	Nov. 9	Nov. 16
10	Nov. 16	Nov. 23
11	Nov. 23	Nov. 30

FIELD TRIPS — One day field trip (October 3rd, 1992) 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	Test (Sept. 25, Nov. 18, during class)	5%
	ii	Mid-Term (Oct. 21, during lab time)	10%
	iii	Field Trip	5%
	iv	Assignments	15%
	v	Weekly Lab	15%
	vi	Lab Quiz	5%
	vii	Lab Final Exam (Dec. 2, 1992)	10%
	viii	Final Written Exam (T.B.A.)	35%
		TOTAL	100%

GRADING GUIDELINES

Percent	Grade
90 - 100%	9
80 - 89	8
72 - 79	7
65 - 71	6
57 - 64	5
50 - 56	4
45 - 49	3
26 - 44	2
0 - 25	1

Rules for Laboratory Sessions

i. You will abe required to arrive at the hour appointed for laboratory session and no later! For your convenience, the laboratory will be opened 30 minutes before the laboratory session begins and will remain open for a maximum of 30 minutes after the scheduled termination of the laboratory period. If you arrive late you will miss the introductory remarks and specific instructions of your laboratory instructor. This will place you at a disadvantage from the outset. Your instructor has been told not to provide repeat performances for late-comers. Be fair to yourselves and to your fellow students. Get there on time!

ii. There will be no eating or drinking in the laboratory. Please walk up the corridor to CAB if you wish to take a break or to smoke. Please do not congregate in the corridor outside the laboratory.

iii. Your laboratory assignments should be completed during the assigned period and your practical book handed to the instructor before you leave. In this way can keep a careful eye on your progress and identify problem areas at an early date. Your books will be examined and your grades assigned prior to handing them back to you at the next session. Take great care of your laboratory manual, it becomes a valuable asses!

iv. There will be no admittance to the laboratories outside the above mentioned times. If you are unable to attend your normal laboratory session and can produce reasonable certification in the form of a medical certificate etc., you may transfer to another session.

v. Unless you have any personal objections to the arrangement, students usually work in pairs in the laboratory. Combinations of more than two persons are not permitted. Try to develop a mood of cooperation and of equal effort. There is no sense in continuing with your partner if you feel dominated. If this is the case, switch partners or work on your own.

FILMS - For GL 1020

Week of Sept. 7	1. Face of the Earth 2. Minerals & Rocks	17 min 14 min	NFB Canada 1967 National Education Television
Week of Sept. 14	3. Kilauea speaks		U of A
Week of Sept. 21	4. Rocks that originate under ground		U of A
Week of Sept. 28	5. Erosion-levelling the land 6. Rocks that form on the earth's surface	14 min 16 min	1964, U of A 1964 Ency. Brit. Ed.
Week of Oct. 5	7. Geologic time		1986, Ency. Brit. Ed.
Week of Oct. 12	8. Why do we still have mountains		U of A
Week of Oct. 19	9. Work of Rivers		U of A
Week of Oct. 26	10. Ground water 11. Glacier on the move	16 min 11 min	1982, Ency. Brit. Ed. 1973, Ency. Brit. Ed. U of A
Week of Nov. 2	12. Sand - The desert in motion	11 min	1969, BFA Edu. Media
Week of Nov. 9	13. Portrait of a Coast	22 min	1982, Circle Oak Prod.
Week of Nov. 16	14. The San Andreas Fault	15 min	1973, Ency. Brit. Ed. U of A
Week of Nov. 23.	15. Continental Drift	15 min	1970, Am. Edu. Film U of A