GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE & TECHNOLOGY
COURSE OUTLINE
WINTER SEMESTER 1996 - 1997

GEOGRAPHY 1300

Introduction to Physical Geography

Lecture	Section A3	M W F	9:00 - 9:50
Lab	Section L1	M	3:00 - 5:50

INSTRUCTOR: Dr. Desh Mittra

COURSE OBJECTIVES

The course has been designed to generate competence in the fundamental concepts of Earth and Atmospheric Sciences through the media of lecture, visual aids, and integrated laboratory exercises. ES 1010 serves both as the introductory course for specialists in Geology or Geography and as a course for non-specialists desirous of obtaining knowledge of the Earth and Atmosphere.

COURSE OUTLINE

Our planet Earth, minerals and different types of rocks, plate tectonics and volcanoes, weathering and erosion, geologic time scale, folds, faults, mass wasting, hydrologic cycle, rivers, wind and deserts, glaciers, oceans, earthquakes and Earth's interior.

Identification of minerals, sedimentary rocks, igneous rocks and metamorphic rocks, topographic maps, cross-sections, geologic maps and structures, rivers, and glaciers.

TEXTBOOKS

Understanding Earth, by F. Press and R. Siever

LAB BOOK

Lab exercises for Earth Science

OTHER ITEMS

1. Simon and Schester's Guide to Rock's and Minerals or any equivalent book.
2. Dictionary of Geological Terms

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:

Jan. 6 to Jan. 10	Introduction & Course Outline Slide show. Origins of Earth (Ch. 1)
Jan.13 to Jan 17	Introduction to plate tectonics, earth structure and composition. Atomic structure of matter, crystals, minerals and physical properties of minerals. (Ch. 2)
Jan. 20 to Jan. 24	Classification of rocks, rock cycles. Igneous rocks; classification origin plate tectonic content and distribution. (Ch. 3 & 4)
Jan. 27 to Jan. 31	Volcanology, volcanic processes and land forms. Sedimentary rocks; classification, clastic versus chemical, lithification processes. (Ch.5, 4, &7)
Feb. 3 to Feb. 7	Metamorphic rocks; classification, metamorphic facies, relation to plate tectonic setting, mineral and energy resources. (Ch. 8 & 23)
Feb. 10 to Feb. 14	Structural geology and rock deformation; folds, faults, plate tectonic setting. Geologic time; absolute versus relative, principles of stratigraphy and relative age dating. (Ch. 9 & 10)
Feb. 17 to Feb. 21 (Mid-Terms)	Earthquakes; elastic rebound theory, Richter scale, causes of earthquakes, epicentre. Earth's interior; seismic evidence, cosmo-chemical constrains, Earth's magnetism and paleo-magnetism. (Ch. 18 & 19)
Mar. 3 to Mar. 7	The hydrologic cycle. Weathering, mass movement slope processes and landforms. Karst topography and caves. (Ch. 6, 11, & 12)
Mar. 10 to Mar. 14	River processes in drainage basins. Development of channels, bars, flood plains, landform and sediments. (Ch. 13)
Mar. 17 to Mar. 21	Continental ice sheets and alpine glaciers; thermal regimes, geomorphic processes, landforms and sediments. (Ch. 15)
Mar. 24 to Mar. 28	Periglacial environments; permafrost, active layer cold-zone geomorphic processes, landforms and sediments. (Ch. 16)

Mar. 31 to Apr. 4	Marine development of beach and rock coast landforms. Submarine erosion and sedimentation. Eustatic and Isostatic sea level variation. (Ch. 17)
Apr. 7 to Apr. 11	Geomorphic processes, landforms, and sediments in desert. Eolian (wind-formed) landforms and sediments. (Ch. 14)
*	**EXAMS**

ASSIGNMENTS You will be given weekly assignments consisting of multiple choice, true/false-type questions. These assignments are open book and test and exam questions will be based on these assignments.

Minitest Every second week, you will be given a minitest at the start of class which will be approximately 20 minutes long. Labs will also have quizzes.

MARKS DISTRIBUTION

Minitests	10%
Assignments	10%
Lab quiz	10%
Weekly labs	10%
Midterm exam	15%
Lab final	15%
Final exam	30%
	100%

GRADING

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

LAB SCHEDULE

January 6	Mineral identification
January 13	Mineral identification
January 20	Igneous rocks
January 29	Sedimentary rocks
February 3	Metamorphic rocks
February 10	Topographic maps
February 19	No labs (Mid-term Exam)
February 24	No labs (Winter Break)
March 3	Topographic maps and cross section
March 10	Geologic maps and structure section
March 17	Rivers
March 24	Glaciers
March 31	Review
April 7	Lab Final Exam

Note - labs could be used for studying rocks, minerals or maps other than scheduled lab hours by pre-arranging with Medha Karnik, our lab technologist.

*** EXAMS**

Mid-Term	February 17, 1997	during lab hours
Lab Final	April 7, 1997	during regular lab time
Written Final	TBA	