

GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE
COURSE OUTLINE

EARTH SCIENCE ES 1030

WINTER SEMESTER 2006

EARTH and LIFE THROUGH TIME

Lecture: Section A3 M 1:00 – 2:20 Room H211
F 11:30 – 15:50 Room H211

Labs AL1 T 14:30- 17:20 Room J107

INSTRUCTOR: **Dr. Desh Mittra** **Office:** J215 **Ph. 539 2981**
email: dmittra@gprc.ab.ca

Office Hours: No set hours, please make an appointment or just come on by my office

TRANSFER CREDIT	U. of Alberta	EAS 103	3 credits
	U. of Calgary	GLGY 201	3 credits
	U. of Lethbridge	GEOL 2060	3 credits
	Athabasca Univ.	GEOL 200	6 credits

COURSE OUTLINE: Geologic and biological processes relevant for historical geology; structural geology and plate tectonics, relative and absolute dating, facies and analysis and correlations, fossils, origin and evolution of life. Origin of our solar system. Generation of the development of continents, mountains, and sedimentary basins. Sedimentary and mineral deposits of economic value and main fossil groups. Index fossils; mass extinction and adaptive radiations.

Laboratory Component

Minerals and Rocks, Sediment and sedimentary structures, Age dating and correlations, Fossils and their evolution, Precambrian and Cambrian rocks and fossils, Early and late Palaeozoic rocks and fossils, Mesozoic rocks and fossils, Cenozoic rocks and fossils.

TEXTBOOK: **THE EARTH THROUGH TIME**, Eighth Edition by Harold L. Levin.

LAB BOOK: **LABORATORY MANUAL FOR ES 1030** by Jason Tuchelt

- REFERENCE BOOKS:**
1. EVOLUTION OF THE EARTH - Dott (Jr.) and Batten (McGraw Hill.)
 2. ESSENTIALS OF EARTH HISTORY - Stokes (Prentice-Hall Inc.)
 3. HISTORICAL GEOLOGY – Mintz (Charles E. Pub.)
 4. HISTORY OF THE EARTH - Eicher and McAlester
 5. THE FOSSIL RECORD AND EVOLUTION - Scientific American 1982.
 6. THE ORIGIN - Stone, I. (The New American Library).

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

Week of Jan. 1	Chapter 1 & 4	Historical Geology & Rocks and Minerals
Week of Jan. 8	Chapter 2 & 3	Earth Geologists & Time and Geology
Week of Jan. 15	Chapter 5	Sedimentary Archives
Week of Jan. 22	Chapter 6	Life on Earth
Week of Jan. 29	Chapter 7	Plate Tectonics
Week of Feb. 5	Chapter 8	Earliest Earth
Week of Feb. 12	Chapter 9	Proterozoic (Midterm Week)
Week of Feb. 19	Reading week	NO CLASSES
Week of Feb. 26	Chapter 10 & 11	Early and Late Palaeozoic
Week of Mar. 5	Chapter 12 & 13	Life of Palaeozoic & Mesozoic Events
Week of Mar. 12	Chapter 14	Life of The Mesozoic
Week of Mar. 19	Chapter 15	Cenozoic Events
Week of Mar. 26	Chapter 16	Life of The Cenozoic
Week of Apr. 2	Chapter 17	Humans
Week of Apr. 9	Chapter 17	Humans & Review

Last day of classes - April 13, 2007

ASSIGNMENTS

You will be given weekly assignments consisting of multiple choices, 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.

LAB SCHEDULE

Jan. 8	Lab. 1	Minerals and rocks
Jan. 15	Lab. 2	Sediments and Sedimentary Structures
Jan. 22	Lab. 3	Age dating and correlation
Jan. 29	Lab. 4	Fossils and evolution
Feb. 05	Lab. 5	Review from lab 1 to lab 4
Feb. 12		----- Lab Exam #1 -----
Feb. 26	Lab. 6	Precambrian and Cambrian rocks and fossils
Mar. 5	Lab. 7	Early Palaeozoic Rocks and Fossils
Mar. 12	Lab. 8	Late Palaeozoic Rocks and Fossils
Mar. 19	Lab. 9	Mesozoic Rocks and Fossils
Mar. 26	Lab. 10	Cenozoic Rocks and Fossils
Apr. 2		----- Lab Exam #2 -----

EXAMS

Mid-Term: Topics covered in the
First 6 weeks.

February 16, 2007

Final Theory - All material covered in theory.

T.B.A.

EVALUATIONS

Mid-Term	20%
Assignments	10%
Weekly labs	15%
Lab Exams	15%
Class Test	10%
Written Final	<u>30%</u>
	100%