

**GRANDE PRAIRIE REGIONAL COLLEGE
EARTH SCIENCE ES 1030
COURSE OUTLINE
WINTER SEMESTER 1998-1999**

EARTH SCIENCE 1030: EARTH and LIFE THROUGH TIME

INSTRUCTOR: Dr. Desh Mitra

TRANSFER CREDIT: (3-3) UT(3) WINTER

COURSE OUTLINE: Lecture Component
M, W, F, 09:00 - 09:50

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 solar system and generation of development of continents, mountains, and sedimentary basins; main sedimentary and mineral deposits of economic value, main fossil groups. Index fossils, mass extinction and adaptive radiations.

Laboratory Component
M 3:00 - 5:50 Room J107

Topographic and Geologic Maps, Paleontology of Protozoa, Porifera, Coelenterata, Brachopoda, Bryozoa, Graptolithina, Mollusca, Arthropoda, Echinodermata, Monera Metaphyta. Time, rocks and fossils. Sedimentary facies. Correlation. Lithofacies and Paleogeography.

TEXTBOOK: VANISHED WORLD - An Introduction to Historical Geology by Roy R. Lemon, W.C. Brown Publication

LAB BOOK: LABORATORY MANUAL FOR ES 1030
Simon and Schuster's Guide to Fossils (Recommended).

- REFERENCE BOOKS:**
1. EVOLUTION OF THE EARTH - Dott(Jr) and Batten (McGraw Hill Ryerson Ltd.)
 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).
 7. HISTORICAL GEOLOGY (Evolution of the Earth and Life through Time) by Reed, Wicander and James, Monroe. (West Publication).

Note: These reference books are kept in the Geology Lab. You can borrow them.

TOPICS

Week 1	Chapter 1, 2 (partly) - Historical Geology & Rocks
Week 2	Chapter 3 and 4 - Fossil Record & Fossil evolution
Week 3	Chapter 5 and 6 - Rocks & time and dating in Geology
Week 4	Chapter 7 and 8 - Origins, the earth & life and Plate Tectonics
Week 5	Chapter 9 and 10 - Uniformitarianism & the Archean Life
Week 6	Chapter 11 - Proterozoic
Week 7	Chapter 12, 13 - The Cambrian and Ordovician World
Week 8	Chapter 14, 15 - The Devonian and Carboniferous
Week 9	Chapter 16, 17 - Permian, Triassic & Jurassic
Week 10	Chapter 18 - The Cretaceous
Week 11	Chapter 19 - Paleogene
Week 12	Chapter 20 - Neogene
Week 13	Revision

LAB SCHEDULE

Jan. 11	Lab. 1	Topographic and Geologic maps
Jan. 18	Lab. 2	Protozoa, Porifera and Coelenterata
Jan. 25	Lab. 3	Brachiopoda, Bryozoa and Graptolithian
Feb. 01	Lab. 4	Mollusca
Feb. 08	Lab. 5	Arthropoda and Echinodermata
Feb. 15	-----EXAM WEEK-----	
Mar. 01	Lab. 6	Monera and Metaphyta
Mar. 08	Lab. 7	Structure Geology and Plate Tectonics
Mar. 15	Lab. 8	Relative and Numerical Age Dating
Mar. 22	Lab. 9	Correlation and Facies
Mar. 29	Lab. 10	Quaternary Geology and Geomorphology
Apr. 05	Review	
Apr. 12	Lab. Exam	

ASSIGNMENTS

# 1	January 13	due	January 20
# 2	January 20	due	January 27
# 3	January 27	due	February 3
# 4	February 10	due	February 4
# 5	February 4	due	February 17
# 6	February 17	due	March 3
# 7	March 3	due	March 10
# 8	March 10	due	March 17
# 9	March 17	due	March 24
#10	March 24	due	April 7
#11	April 7	due	April 14

EXAMS

Mid-Term: Topics covered in the First 6 weeks.	February 15, 1999 (During Lab Hours)
Final Theory - All material covered in theory.	T.B.A.
Final Lab - All Material Covered in Lab	April 12, 1999.

EVALUATION

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

GRADING

<u>Percent</u>	<u>Grade</u>
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