Grande Prairie Regional College
Department of Science and Technology

Course Outline
Earth Science 1030 - Earth and Life Through Time
Winter 2004

Lecture: Monday from 1:00 to 2:20 and Friday from 11:30 to 1:00 in J201
Laboratory: Monday from 2:30-5:20 in J107

Instructor: Jason Tuchelt
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Office Hours: no set hours, please make an appointment or just come by my office – J210

Course Summary
This course will examine the complete known history of the earth as viewed through the eyes of an earth scientist. Topics include the origin of the solar system and development of the Earth's surface. Theories on the origins and evolution of life, mass extinctions and adaptive radiations will be explored. Geologic and biologic processes relevant to historical geology, structural geology and plate tectonics will also be examined.

Course Objective
The course has been designed to generate competence in the fundamental concepts historical geology including: evolution of life through time, and; evolution of geologic processes and landforms through time. ES 1030 serves both as a course for specialists in Geology or other environmental sciences and as a course for non-specialists who desire to obtain knowledge of the Earth's natural history.

Text Book: Earth and Life Through Time, Levin

Lab Book: Lab Exercises for ES 1030 which is a photocopied lab manual

Other Items (not required but may prove useful)
Dictionary of Geologic Terms
Simon and Schuster's Guide to Identifying Fossils or any other equivalent book

All books and materials are available at the College Bookstore
Labs can be used for studying rocks, minerals or maps other than scheduled lab hours by pre-arranging with Medha Karnik the lab technologist (Telephone 539-2952)

Mark Distribution

Geologic Time Scale Quiz	5%
Weekly Labs	10%
Laboratory Mid Term Exam	7.5%
Laboratory Final Term Exam	12.5%
Mid Term Exam	20%
Final Term Exam	25%
Term Paper *(due March 19)*	15%
Presentation	5%

Geologic Time Scale Quiz
The names for the time periods of the Geologic Time Scale will be used frequently in class. Thus, you must have a very good understanding of this aspect. The quiz will take the following form:

- If you get all the answers right you will obtain the full 5% allocated.
- If you get one or more answers wrong you will obtain a mark of zero of the 5% allocated.
- If you fail the first exam you may write a makeup exam but it will be only be worth a maximum of 3% and marked using the same rules as listed above.

Laboratory and Lecture Term Exams
The lecture and laboratory will each have 2 tests throughout the semester. The first will occur in the middle of the semester and the second at the end of the semester. The tests will not be cumulative.

Term Paper
You will be asked to complete a 1500 to 1750 word essay on a topic dealing with historical geology. See enclosed list for suggested topics or come to me if you have one you would like to try.

Presentation
You will also be required to complete a brief 10 to 15 minute presentation on a summary of your term paper topic to the class. You will be marked on your presentation by your peers, not of public speaking ability but the quality of materials and quality of the information presented.

Late Assignments
For all lecture and lab assignments that are not handed in on the assigned due date a 10% per day penalty will be applied. No assignments will be accepted if they are over 3 days late.

Sickness / Family Emergencies
If you are sick or have a family emergency occurring on an exam or quiz date you must contact the instructor as soon as possible and provide a doctors or family members letter (whichever is applicable) to the instructor as soon as possible for you to get a rewrite of the exam. Missing exams due to outside work obligations is not a suitable excuse.

Lecture Outline

The following table is an approximate schedule of lecture topics to serve as a study aid.

Week	Topics	Chapter
January 5	Development of Historical Geology	1
January 12	The Fossil Record and Evolution Minerals	4 2
January 19	Rocks Sedimentary Archives	2 3
January 26	Relative and Absolute Dating Earth Structure and Plate Tectonics	1 4
February 2	The Archaen	6
February 9	**Mid Term Exam**	
February 16	Reading Week – No Lectures	
February 23	The Proterozoic Life of the Paleozoic	7
March 2	Early and Late Paleozoic Events	8 and 9
March 9	Life of the Paleozoic	10
March 16	The Mesozoic Life of the Mesozoic	11 12
March 23	The Cenozoic Life of the Cenozoic	13 14
March 30	Human Origins	14
April 2	Class Presentations	n/a
April 9	Review	n/a
April 16	**Last Day of Classes**	

Lab Outline

Week	Lab #	Topic
January 5		No labs
January 12	1	Minerals
January 19	2	Rocks
January 26	3	Structural Geology and Plate Tectonics Relative and Absolute Dating
February 2	4	Fossils and Evolution
February 9	5	Review Lab
February 16		Reading Week – No Classes
February 23		**Mid Term Lab Exam**
March 1	6	Precambrian Rocks and Fossils
March 8	7	Ordivician, Silurian and Devonian rocks and fossils
March 16	8	Mississipian, Pennsylvanian and Permian rocks and fossils
March 22	9	Mesozoic rocks and fossils
March 29	10	Cenozoic rocks and fossils
April 5	11	Review Lab
April 12		**Final Term Lab Exam**