ESS 213 Evolution of the Earth, Spring 2008

Class: M/W/F 9.30-10.20 JHN 175 Labs: M/W, T/Th & T/Th JHN 11

Textbook required *Historical Geology: Evolution of the Earth and Life Through Time* by Wicander and Monroe, 5th or 6th editions

Class Schedule, Labs and Reading

week	Class Topics	Reading	Labs
1.	Introductions. What is historical geology? Brief review of the fundamentals of plate tectonics.	Chapters 1, 2 & 3	No Mon/Tues lab
	Sedimentary rocks, depositional environments,	2 &6 4 & 5	W/Th Sedimentary rocks: hand samples, thin sections
2	What do we use as evidence to tell geologic time?	4 &5	M/Tu Fossils and fossilization and diagensis
	Relative and numerical timescales		W/Th History of lake – introduction to stratigraphy
	Stratigraphy - putting it all together using as many different lines of evidence as possible		
3.	Facies and time datum levels; eustatic sea levels	7	M/Tu and W/Th Facies: further exercises on
	Numerical dating/paleomagnetic timescale/other dating methods		stratigraphic correlations and changing depositional environments
4.	1st mid-term	8	M/Tu Old Rock: Archean and Proterozoic rock types
	Earliest Earth environments and first life forms —pushing the envelope.		W/Th Geologic maps: working with geologic maps, structure
	Archaean - Proterozoic changes		and geologic histories
	Manchester State Park, Kitsap Peninsula, early afternoon low tide. Sat&Sun 4/26 &27		Introduction to field mapping
5.	Evolution	9	M/T and W/Th Geologic maps continued all week
	Proterozoic—building continents		
	Snowball Earth and the 1 st multi-cellular organisms		
6.	Paleozoic time—geological evidence of eustatic changes	10,11 & 12	M/Tu Invertebrate fossils - Paleozoic
	Paleozoic life: biospheric-geospheric interactions and the evolution of the terrestrial landscape		W/Th Invertebrate Fossils Meso/Ceno & microfossils

	Ellensburg field trip: three dates available, each one restricted to 22 students. Saturday		More experience in field mapping and construction a geologic history
7.	2 nd Midterm	11,12	M/Tu Plant fossils and
	Paleozoic extinctions	&13	vertebrates
	Mesozoic times –		W/Th Burke Museum
	plate tectonics		
	Ellensburg field trip Saturdays and Sunday		POSTER INFO NEEDED BY FRIDAY!
8.	Mesozoic life - dinosaurs and other oddities	14,15	M/Tu Pollen & Tephra lab:
	3 rd Midterm		exercise in a current topic of research in Washington state
	End Cretaceous and the big impact		ABSTRACT FOR YOUR POSTER BY MONDAY CLASS TIME
9.	Mon 5/26 is Memoríal Day	16,18	Final poster prep
	Cenozoic times—climate swings Tectonic development of western North America Mammals and microfossils		
10.	Quaternary: climate swings	17, 19	Posters judging
	The hominids take over and change the rules.		

Your Posters Project	Objective: To construct a scientific poster on a topic relevant to this course. Included on the poster will be the abstract, introduction, body of scientific evidence, illustrations, conclusion, references used.	
	Work in pairs (preferably within your lab group)	
	Choose any topic that is relevant to historical geology – it MUST have a geological time component <i>and/or</i> stratigraphic or organic evolutionary (i.e. over time) component. NO VOLCANOES!	
	All topics <u>must</u> be passed by me: this ensures that you are not spending time on something that won't work because it is not appropriate for this class, is too broad, or one with inadequate reference materials.	
	We will give you instructions on content, format and how to make a poster and Alecia will oversee the final product.	
	Part of this project is peer-review, i.e. each of you will write up a review of other posters in your lab group (guidelines will be given at the time).	