

GEOL 402 - EVPP 505
GEOLOGICAL DEVELOPMENT OF NORTH AMERICA
SPRING 2003

Class meets: Monday 4:30-7:10, David King 2074
Instructor: Rick Diecchio, DK 3040, 993-1208, rdiecchi@gmu.edu
Office Hours: mon 2-3, tue 9-10, wed 11-12
Text: King, P.B., 1977, The Evolution of North America: Princeton University Press.

Additional readings will be assigned weekly

Objective of course: applying geologic knowledge and skills to interpret the regional geology and tectonic history of North America.

<u>date</u>	<u>topics</u>	<u>chapter</u>
27 Jan	Introduction, physiography of North America	I
3 Feb	Canadian Shield, Greenland, Interior Platform	II, III
10 Feb	Appalachian-Ouachita -Marathon System , overview, structure, provinces	IV-1, 2, 3, 6
17 Feb	Crystalline Appalachians - Blue Ridge, Piedmont, New England, Maritime Canada	
24 Feb	Appalachian stratigraphy - Valley & Ridge and Appalachian Plateaus	IV-4, 5
3 Mar	Atlantic & Gulf Coastal Plains, Bahamas, West Indies	V
10-14 Mar	(tentative) Field trip: geology and tectonic history of the Northeastern US	
17 Mar	Mid-Term Exam, preview of class projects	
24 Mar	Cordilleran System , overview, structure, provinces	VI

31 Mar	Colorado Plateau & ancestral Rockies, stratigraphy	VII
7 Apr	Cordilleran mountain-building: Rocky Mountains, Sierras, Cascades, Pacific Mtns	VIII
14 Apr	Late Cenozoic features of Cordillera: Basin & Range, Columbia & Snake River Plains, Cascades & Coast Ranges	IX
21 Apr	Arctic Borderlands	
28 Apr	Pleistocene modifications of North America	
5 May	Team presentations take-home exam due 9 May, 12 noon	

Grading	mid-term exam	30
	Final exam	30
	Project	30
	Participation	10

Outside readings: Each class we will discuss the assigned readings. Each student will be responsible for leading one of the discussions.

Team Project: Each team will be assigned a line of cross-section that will cover at least 2 states. Cross-sections will be constructed at the horizontal scale of 1:500,000 (1 inch = 8 miles), and a vertical scale of 1:48,000 (1 inch = 4000 ft). Vertical exaggeration will therefore be about 10x. Cross-sections should be inked and colored, and should contain a complete legend, scale bars, index map, topographic profile, surficial geology, subsurface structural interpretations, and crustal thickness or depth of the MOHO. Be sure to label the significant topographic and geologic features, provinces, etc. Provide a complete list of references.

Cross-sections will be presented to the class on 5 May. Presentations should include description of major geologic features, and a description of tectonic history as documented by the geology depicted in the cross-section. Teams should become completely familiar with regional geology along their line of section.