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

Class meets: Monday 4:30-7:10, David King 2074
Instructor: Rick Diecchi, DK 3040, 993-1208, rdiecchi@gmu.edu
Office Hours: mon 2-3, tue 9-10, wed 11-12

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.

date   topics                                                   chapter
27 Jan Introduction, physiography of North America                I
3 Feb  Canadian Shield, Greenland, Interior Platform              II, III
10 Feb Appalachian-Ouachita - Marathon System, overview,         IV-1, 2, 3, 6
      structure, provinces
17 Feb Crystalline Appalachians - Blue Ridge, Piedmont, New       
      England, Maritime Canada
24 Feb Appalachian stratigraphy - Valley & Ridge and Appalachian  IV-4, 5
      Plateaus
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 Mts  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.