Texas A&M University Corpus Christi

Geology 3329

Geology of National Parks

Fall 2013

Instructor  Lance Pape


Class Meetings  Tues & Thurs, 2:00–3:15 pm, CS226

Office Hours  Tues & Thurs, 3:30–4:30 pm.

Course Description
Geology of National Parks uses selected US National Parks to introduce you to the regional geology of the United States. The course will cover US National Parks representing the great variety of geologic settings found in this country as they relate to geomorphic provinces that associate with plate tectonic features. The course will review major geologic principles and basic geological concepts, e.g., plate tectonics and the rock cycle. Geomorphology will also be emphasized. Prerequisite for this course: GEOL 1403 or GEOL 1303.

Expected Learning Outcomes
Upon successful completion of this course, you should have...

- Basic understanding of the regional geology of the United States
- Good understanding of the basic elements of physical and historical geology
- Awareness for the natural world surrounding us
- Comprehension of geologic features related to plate tectonics as found in various national parks
- Valuable experience in preparing and presenting pamphlets and presentations on national parks’ geological environments, history, etc.

Evaluation and Grade Assignment
Your final grade will be based on a scale from the following point sources:
A) Section exams (4 at 50 points each and 1 at 100 points)  300 points
B) Park presentations and discussions (2) at 100 points each  200 points
   Total  500 points

Final grades will be awarded as follows:
A: 450–500 points; B: 400–449 points; C: 350–399 points; D: 300–349 points; F: <300 points

Exams may only be taken during the scheduled time, except in case of an emergency, for which documented proof will be required. However, in any case, make-up exams will not be permitted after the graded exam has been returned to the class.

Presentation due dates (see below) are to be observed. Rescheduling is only permitted in case of documented emergencies and with previous approval by the instructor. No late work will be accepted. 0 points will be awarded for a missed or late assignment.
Classroom/Professional Behavior
Texas A&M University Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either a) the instructor's ability to conduct the class or b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be required to leave the classroom. The use of cell phones, pagers, CD players, headphones, and any other electronic device as designated by the instructor is not allowed in class. Keep these devices in your bags or pockets and not on the tables. You may be required to refrain from using a laptop in class.
Cheating will not be tolerated and will result in a failing grade in the course and possible further disciplinary action by the university.

Notice to Veterans and Students with Disabilities
Texas A&M University Corpus Christi complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. If you are a returning veteran who experiences cognitive and/or physical access issues in the classroom or on campus or otherwise suspect that you may have a disability (physical impairment, learning disability, psychiatric disability, etc.), regardless of veteran status, please contact the Services for Students with Disabilities Office, located at Corpus Christi Hall 116, (361) 825-5816, http://disabilityservices.tamucc.edu/.

Grade Appeal Process
As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules web site at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Division of Student Engagement and Success.

Dropping the Class
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop, to be sure it is the best course of action. Should it be necessary to drop, you must initiate the process through the Registrar by filling out a course drop form. Simply stopping attendance and participation will not automatically result in your being dropped from the class. November 15, 2013, is the last day to drop a class with an automatic grade of “W” for this term.

Academic Advising
The College of Science and Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. The College's
Academic Advising Center is located in Center for Instruction 350, and can be reached at (361) 825-6094.
Your parks report covers geology of the park, role in regional plate tectonics, its similarities and differences regarding geologic features, its stratigraphy, petrology, and evolution. Be prepared to answer questions raised by your peers during the presentation.
Lecture Schedule
This will be followed as closely as possible, although some revisions may become necessary during the semester.

Thu 9/5  Intro, Syllabus, Projects, Safety, Geomorphology, Puc-Rces, How To Categorize The Parks
Tue 9/10  The Dynamic Earth: Age, Formation, Layers, 3 Rock Types, Continental Drift, Plate Tectonics, Spreading, Subduction, Extension & Collision Boundaries, Plumes, Vulcanism
Thu 9/12  Surface Processes: Physical & Chemical, Weathering, Erosion Processes And Rates,
Tue 9/17  Geomorphology, Types **** Classification (By Erosion Processing), Landscapes Associated With Active And Passive Continental Margins, Effects Of Changing Sea Level
Thu 9/19  Specific Landforms Associated With Plate Boundaries, Tectonics, Vulcanism, Earthquakes
Tue 9/24  Exam
Thu 9/26  Divergent Plate Boundaries, Continental Rifts And Their Parks, The Basin & Range Province:
  1. Newberry Crater
  2. Grand Teton National Park (NP)
  3. Death Valley
  4. Sunset Crater
  5. Capulin Volcanic Province NM
  6. White Sands National Monument (NM)
  7. Tucson Basin & Range
  8. Guadalupe Mnts NM
  9. Imperial Valley

Tue 10/1  Passive Continental Margins:
Thu 10/3  1. Acadia NP
  2. Cape Cod National Seashore (NS)
Tue 10/8  3. Cape Hatteras NS
  4. Dry Tortuga NP (FL Keys)
  5. Birdfoot Delta Water
  6. Padre Island NS
  7. Grand Canyon AZ
  8. Canyonlands, UT
  9. Southwestern Badlands

Thu 10/10  Convergent Plate Boundaries:
Tue 10/15  1. Katmai, AK NP
  2. Mt. St. Augustine Redoubt
Thu 10/17  3. Mt. Rainier NP
  4. Mt. St. Helen National Volcanic Monument (NVN)
Tue 10/22  5. Crater Lake NP
  6. Blue Ridge Parkway
  7. Yosemite NP
  8. Big Bend NP
Thu 10/24  Exam
Tue 10/29  Collision Mountain Ranges:
Thu 10/31  1. Gates Of The Arctic/Brooks Range
  2. Great Smoky Mtns
  3. Llano Uplift/Marathon Mtns
  4. Hot Springs NP
Tue 11/5  Transform Plate Boundaries:
Thu 11/7  1. Tree Fairweather Fault
  2. Point Reyes NS
  3. Pinnacles, CS National Monument (NM)
  4. Carrizo Plain, CA
  5. Gulf Of California Spreading Ridge

Tue 11/12  Hot Spots:
Thu 11/19  1. Hawaii Volcanoes NP
  2. Pineate Mtns, Sonora MN
  3. Yellowstone NP
Thu 11/21  Exam

Tue 11/26  Continental Tectonic/Erosional Plates
Tue 12/3  1. Badlands, SD
  2. Skip Rock NM
  3. The Goosenecks, Mexican Hat
  4. Arctus NP
  5. Dinosaur NM
  6. Black Canyon Of The Garrison
  7. Bryce Canyon
  7. Mesa Verde NP
  9. Zion NP
  8. Grand Staircase/Escalante
  10. Mt Rushmore NM
  12. Glacier Bay NP
  15. Wrangell St. Elias NP
  14. Mammoth Caverns
  17. Fig, 16-11 P.224
  16. Carlsbad Caverns NM
  19. Accreted Terrains Of Alaska
  18. Monument Valley NM
  21. Mohawk Sand Dunes
  20. Rocky Mountains NP
Thu 12/12  Exam