Instructors: Dr. LaRell Nielson and Dr. Chris Barker

Department: Geology

Emails: rnielson@sfasu.edu, cbarker@sfasu.edu

Phones (936): Nielson: 468-2024; Barker: 468-2340

Offices: Nielson: Rm 304; Barker: 305, Miller Science Building

Office Hours: TBA by each professor

Class meeting time and place:
Lecture: 9 - 9:50 am, MW, BUSI 343;
Labs are in Miller Science Building:
Tues., 2:30 - 5 pm, Rm 333
Wed., 2:30 - 5 pm, Rm 333


Objective: This team-taught course is a comprehensive introduction to igneous, sedimentary and metamorphic rocks. You will learn about the origin and occurrence of different types of rocks, their mineral constituents and how to identify them in hand samples. To take advantage of the expertise of the geology faculty, the semester is divided into three equal segments. Dr. Nielson will teach igneous and sedimentary rocks, and Dr. Barker will teach metamorphic rocks.

Prerequisites: GOL 131, 132, 241. Required field trip. Lab fee required.

Field Trip: This course has a required weekend field trip on April 21-23. We will travel by SFA vans to the Llano region to study exposures of the three main rock types. You will learn about rocks in greater detail than on the Hill Country field trip course. You will take notes and rock samples at stops. Your notebook will be collected near the end of the trip. You may also be required to turn in rock samples. NOTE: If you miss the field trip, you will receive an incomplete for the course and will have to make it up next Spring.

We will need several drivers for the field trip. ALL SFA geology majors should get certified early this semester to drive university vans so that driving can be shared. Contact Shana to start the process. The first few students who sign up to drive for this field trip will get paid for driving! See Shana immediately about getting certified to drive.

Evaluation: Each instructor will provide a specific syllabus for his segment of the course. You can expect each instructor to give at least one lecture exam, one or more lab exams and weekly lab assignments. Other assignments or pop quizzes may be given at the discretion of the instructors. Your grade for each segment will count 32%, for a total of 96%. The remaining 4% of your grade will come from the field trip. The instructors will meet at the end of the semester and determine your final course grade. Note: there is no comprehensive final exam that covers all three rock types; instead, each instructor will test you over the material from their section.

Ign (32) + Sedim (32) + Meta (32) + FT (4) = 100

NOTE: You must take all major lecture and lab exams and turn in all lab and field trip assignments in order to pass the course.

TIME TABLE  Approx. start dates for each section of Petrology:

<table>
<thead>
<tr>
<th></th>
<th>Lab</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGN rocks</td>
<td>1-19-16, Tues</td>
<td>1-20-16, Wed</td>
</tr>
<tr>
<td>SEDIM rocks</td>
<td>2-23-16, Tues</td>
<td>2-22-16, Mon</td>
</tr>
</tbody>
</table>
** ELECTRONIC DEVICES. ** Laptops or other computers, cell phones, iPods, iPads, cameras, camcorders, Blackberries, and all other electronic devices **CANNOT BE USED DURING LECTURE OR LAB** and must be turned off and put away. This is because we have had problems with students surfing the web, texting, facebook-ing, emailing, playing games, listening to music, etc., during class.

** Of course, all electronic devices must be turned off and put away during tests. Failure to observe this rule may result in an F for a test! **

Adjustments to the timetable and other aspects of the course may be made as needed at the discretion of the instructors.

** It’s a very interesting course. Have fun learning about rocks! **

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** The Fine Print: Pedagogical Objectives and University Policies **

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** Course Objective **

The objective of Petrology is to gain an understanding rocks; to be able to identify them in hand samples and in the field and understand their origins.

** Student Learning Outcomes (SLOs): **

The student is expected to understand and apply the following concepts to land processes:

1. Identify the major minerals that make up igneous sedimentary and metamorphic rocks.
2. Identify each of the different types of igneous sedimentary and metamorphic rocks.
3. Explain the origin of each of the different types of igneous sedimentary and metamorphic rocks.
4. Explain where igneous sedimentary and metamorphic rocks form on the earth.
5. Explain the relationship of each rock type to the plate tectonic model.

** Examples of Topics Covered (time permitting): **

** Igneous Rocks:**

1. Organization and introduction
2. Magmatic mineralogy
3. Minerals review
4. Geology of magmatic environments
5. Classifications, characterization, fabrics
6. Geochemistry
7. Volcanism
8. Origin of magmas
9. Crystallization of magmatic melts
10. Regional magmatic petrology
11. Economic aspects
12. Igneous rocks of the mantle, oceans, continents

** Sedimentary Rocks:**

1. Origin of sedimentary rocks
2. Types of sedimentary rocks

3. Depositional basins and plate tectonics
4. Weathering and soils
5. Conglomerate
6. Sandstone
7. Mudrocks
8. Limestone
9. Dolostone
10. Diagenesis
11. Evaporites
12. Chert
13. Iron-rich rocks
14. Phosphorites
15. Coal

** Metamorphic Rocks:**

1. Definition of metamorphic rocks
2. Metamorphic facies and facies series
3. Pressure-temperature-time models for metamorphism
4. Metamorphic minerals
5. Metamorphic textures and structures
6. Metamorphic recrystallization
7. Common Metamorphic rock types
8. Metamorphic reactions
9. Metamorphism of mafic and ultramafic igneous rocks
10. Metamorphism of aluminous clastic rocks
11. Metamorphism of calcareous rocks
12. Metamorphic classification
13. Assemblage Reactions and equilibrium in metamorphic rocks

** CLASSROOM POLICIES **

** Exams **

Exams will vary, but may include any or all of the following sections: 1) multiple-choice questions; 2) true / false questions; 3) fill in the blank questions; 4) short answer ques-
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an

Exam scheduling conflicts for officially sanctioned university reason will be accommodated at a different time or date. In the event of such conflicts, you must inform the instructor at least one week prior to the exam to reschedule your exam.

Make-up exams are only given in documented cases of official university activities, illnesses or deaths in the family. If the final is missed for a legitimate excuse, an “Incomplete” will be given at the final and a make-up exam can be taken at the beginning of the next semester. Make-up exams will be different than the regular class exam and may be entirely essay format.

Lectures and Labs
Be prepared for lectures by reading the material to be covered in lecture prior to attending class. Questions are encouraged and welcome – do not hesitate to ask questions in class.

If you are late to class, please seat yourself quietly. Try not to be late because it interrupts others in the class. If you need to use the restroom or become ill, please excuse yourself from the lecture quietly.

Office Hours
Official office hours are listed on each professor's syllabus. If you need to speak to the instructor but cannot make these posted office hours, please contact the instructor by phone or email to schedule a different time.

UNIVERSITY POLICIES
Add/Drop Policy
Students may add courses through the 2nd class day during the summer semesters and through the 4th class day during the fall or spring semesters. Academic Department Chairs may reconcile class schedules through the official reporting date. Students may drop classes through five working days past mid-semester or mid-session as applicable. A student will not be allowed to drop a course after these dates, unless he or she withdraws 4 from the University. For information please visit: http://www.sfasu.edu/upp/pap/academic_affairs/add_drop.html

Course Evaluation
At the end of the semester you will be asked to evaluate this course. Evaluations will be done on-line and you will be reminded when the evaluation period starts. The course evaluation must be done before the final exam. Students who fail to complete their course evaluations may receive an “Incomplete” grade for the course.

Academic Integrity
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an

assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. In the hopes of deterring incidents of cheating and/or plagiarism this class employs a "zero tolerance" policy meaning that if a student commits cheating or plagiarism they receive a grade of F for the class.

Disability Services (DS)
If you have a documented disability that may require assistance, you will need to contact the Disability Services (DS) for coordination in your academic accommodations. Disability Services is located within The Human Services Building, Room # 234. The DS phone number is (936) 468 3004. You may also visit their website at: http://www.sfasu.edu/disabilityservices/index.htm
If you have a special need/disability, please let the instructor know outside of class sometime during the first week of the course. This helps to adjust or alter plans so that problems can be minimized and your learning experience can be maximized.

DISRUPTIVE BEHAVIOR. A studious atmosphere must be maintained in the classroom so that everyone can concentrate on the material being presented. Disruptive behavior, including but not limited to, whispering and talking, repeatedly making noises, coming in late or walking around during lecture, or using electronic devices such as cell phones will not be tolerated if it disturbs your classmates or the professor. Here is the university’s statement on this topic:

“Acceptable Student Behavior”:
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate / inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

Absences
If you are ill or injured you should get documentation from medical facilities and file a report with the judicial office on campus. Your absence will then be reported to all your instructors.