2018 / Fall Semester
Geology 408
Stratigraphy

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Office Hours: 9-10 M-R and 2:30-3:30 M, W
Department: Geology
Class meeting time and place: 10 AM, MW in 326 Miller Science Building
Lab meeting time and place: 2:30 PM, Thursdays in 326 Miller Science Building

Course Description: Stratigraphy and Sedimentation

Two hours lecture, three hours laboratory per week. Study of basic stratigraphic relations and the identification, origin, distribution and correlation of sedimentary rocks. Prerequisite: GOL 242. Required lab fee. Prerequisites: MTH 220, 233; CHE 134 plus (either BIO 131, 133 or PHY 132).

Program Learning Outcomes:

1. Demonstrate knowledge of the fundamental core geologic concepts (Mineralogy, Petrology, Structural Geology, Stratigraphy, Geophysics and Geochemistry). (Concepts)
2. Execute geologic procedures and methods accurately, appropriately and efficiently. (Skills)
3. Apply principles of logic and reasoning to develop and analyze geologic problems and data. (Logical - Reasoning)
4. Demonstrate competence in using various geologic tools, including technology, to formulate, represent, and solve problems. (Critical thinking - Problem Solving)
5. Demonstrate proficiency in communicating geologic information in an appropriate form to the expected audience. (Communication)

Student Learning Outcomes:

1. Properly identify and describe sediment rocks
2. Measure and describe stratigraphic units
3. Construct from field data stratigraphic columns, fence diagrams, and correlation charts
4. Describe well cuttings and core
5. Work with and correlate seismic sections
6. Construct isopach and facies maps
7. Produce biostratigraphic correlation charts
8. Properly use Stratigraphic nomenclature
Text and Materials:

Textbook: Principles of Sedimentology and Stratigraphy - Sam Boggs, Jr

Course Requirements:

One Lecture Exam
Final Exam
Quizzes (Approximately 10)
Measured Sections from the lab (Approximately 8)
Three Cross-section
Three Correlation Charts
Biostratigraphic Correlation Chart
Paleocurrent Analysis
Core Project
Cuttings Lab Project
Thickness Map Project
E Log Project
Seismic Project
Facies Project

Course Calendar:

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<tr>
<th>Topic</th>
<th>Reading Assignment</th>
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<tr>
<td>Introduction (One Class Period)</td>
<td>Chapter 1</td>
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<tr>
<td>Sedimentary Rocks (One Class Period)</td>
<td>Chapter 2</td>
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<td>Sedimentary Process (One Class Period)</td>
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<td>Field Methods (One Class Period)</td>
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<td>Sedimentary Structures (Two Class Periods)</td>
<td>Chapter 5</td>
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<td>Siliciclastic Sedimentary Rocks (1 Class Period)</td>
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<td>Carbonate Sedimentary Rocks (1 Class Period)</td>
<td>Chapter 7</td>
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<td>Other Sedimentary Rocks (One Class Period)</td>
<td>Pages. 649-679 Text</td>
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<tr>
<td>Stratigraphic Code and other guides 4 Periods</td>
<td>Pages. 649-679 Text</td>
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</tbody>
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Mid Term Exam

Principals of Stratigraphy (One Class Period) Chapter 13
Lithostratigraphy (One Class Period) Chapter 13
Seismic Stratigraphy (One Class Period) Chapter 14
Sequence Stratigraphy (Two Class Periods) Chapter 15
Magnetostatigraphy (One class Period) Chapter 16
Biostratigraphy (One Class Period) Chapter 17
Chronostratigraphy (One Class Period) Chapter 18
Geologic Time Scale (World-North America) Pages 676-679 (Text)
Basin Analysis (One Class Period) Chapter 19
Kinds of Sedimentary Basins (One Class Period) Chapter 19
Local Sedimentary Section (One Class Period) Chapter 19
Environmental Interpretation (One Class Period) Chapter 8
Continental Environments (One Class Period) Chapter 9
Marginal Marine Environments (One Class Period) Chapter 10
Clastic Marine Environments (One Class Period) Chapter 11
Carbonate and Evaporate Environments Chapter 12
Deep Marine Environments (One Class Period) Conclusions

Lab Schedule

Week    Topic
01      Measured Section - Cushing, TX
02      Paleocurrent Analysis - Rose Diagram
03      Measured Sections Mt. Enterprise, TX
04      Measured Sections Mt. Enterprise, TX
05      Measured Sections Mt. Enterprise, TX
06      Measured Sections Mt. Enterprise, TX
07      Correlation Chart Mt. Enterprise, TX
08      Panel Diagram Mt. Enterprise, TX
09      Isopach Map
10      Core Description
11      Well Cuttings Analysis
12      Electric Log Analysis
13      Seismic Profile Analysis
14      Biostratigraphy Project
15      Facies Analysis

Grading Policy:

Lab and Lecture will be 50% each and the two grades will be averaged to make the final grade.

Calculation of final grades:

Lecture Grade Calculation

  Lecture Exam 1:  _________100 points
  Final Exam:      _________200 points
  Quizzes:         _________100 points
  Total points:    _________400 points

  ______% Your Lecture Points divided by the Lecture Points Possible (Lecture %)
Lab Grade Calculation

Assignments will be due at the start of the class period or at an assigned time.

Lab Grade

01 Measured Section (Cushing) ___(100)
02 Paleocurrent Project ___(100)
03 Measured Section ___(100)
04 Measured Section ___(100)
05 Measured Section ___(100)
06 Measured Section ___(100)
07 Measured Section ___(100)
08 Measured Section ___(100)
09 Measured Section ___(100)
10 Correlation Chart ___(100)
11 Fence Diagram ___(100)
12 Core Description ___(100)
13 Well Cuttings Analysis ___(100)
14 Electric Log Analysis ___(100)
15 Seismic Analysis ___(100)
16 Biostratigraphy Project ___(100)
17 Facies Analysis ___(100)
Total ___(1700)

Your Lab Total Points_____ / Lab Points Possible (1700) = _____%

100-90% = A, 89-79% = B, 79-70% = C, 69-60% = D, 59-0% = F

Labs 1-11 (measured section and data collection labs and all correlation diagrams (3) and panel diagrams (3) associated with the measured sections projects) must be completed and corrected until a grade of 100% is achieved to pass Stratigraphy with a C or better grade.

Lecture and Lab will count 50% each and will be averaged to give the final grade.

Class % _____ + Lab % _____ Divide by two = Course % _____

The course letter grade is based on Course %:

100-90% = A, 89-80% = B, 79-70% = C, 69-60% = D, 59-00% = F

Make-Up Exams:
Do not miss schedule exams unless you have a Doctor’s excuse or Dean of Students Excuse. I reserve the right to give an oral exam as a make-up. Unexcused absence = 0.

**Final Exam:** Monday, December 12, 2018 10:30 AM - 12:30 PM

**Attendance Policy:**

Students are required to attend every lecture. Attendance will be monitored by unannounced quizzes, up to two per class period, that will effect the course grade. If you are ill or have a university excuse contact me before class.

**Academic Integrity (A-9.1)**

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

**Definition of Academic Dishonesty**

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. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

**Withheld Grades Semester Grades Policy (A-54)**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.
The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**Students with Disabilities**

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).