Course Description: Earth systems, rocks and minerals, sedimentology and stratigraphy, geologic time and history of Earth, structural geology, folding and faulting, origin, nature, and occurrence of petroleum, formation names, and evolution of the Permian Basin. Also discussed is oil in the Permian Basin – trends, plays, and petroleum systems, surface and subsurface mapping methods, working with logs, sources of data, well-site operations, and formation evaluation. Students will explain geological concepts and processes as related to the exploration and exploitation of hydrocarbons; use a working knowledge of geology and associated terminology to effectively interact with engineers, geologists, landmen, and associated disciplines within the energy industry; utilize and evaluate surface and subsurface maps, well logs, well site and formation reservoir data.

Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. Students who do not actively participate in an academically-related activity will be reported as never attended and dropped from the course.

- Students MUST provide their own pencils. The use of ink pens will not be permitted for lab work. The instructor will provide advanced notice to students concerning other supplies needed for forthcoming lab sessions.
- Students must provide their own Scantrons® (Form 882-E) for lecture exams.

(The student may purchase these texts from the Midland College Bookstore or any retail or wholesale book outlet, including any online distributors.)

Course Goals/Objectives: Four (4) broad goals are identified. These are:
1. Understanding the Earth System. Important learning topics include mineralogy and chemistry of minerals; the rock cycle; identification of the 3 major rock types (igneous/volcanic, sedimentary, and metamorphic); the rock forming processes; Geologic Time and stratigraphy, and the structure of the Lithosphere.
2. Understanding Surface Processes. Major topics include the work of water, rivers, wind, and ice on the landscape.
3. Understanding Internal Earth Processes and the External Effects. Major topics are earthquakes, volcanoes, and mountain building.

Student Contributions and Course Policies:
1. Turn off all electronic devices such as cell phones, MP3 players, beepers and pagers unless (a) it is required for the job AND (b) the instructor is notified PRIOR to class that the device is necessary.
2. Spend at least 2 hours each week in out-of-class preparation; one hour outside the classroom for each hour of classroom instruction.
3. Attend both the lecture and lab portions of the course.

Competencies:
Reading: Understanding the material incorporated in the text used in this course will require the student to analyze and interpret various geological concepts.

Writing: Producing clear, grammatically correct and coherent one-page papers related to geologic products and processes.
**Listening:** The primary teaching methods used in this course are discussion and lecture. Understanding the oral presentation of material will require the student to analyze and interpret various geological concepts.

**Critical Thinking:** Critical thinking as exemplified by problem solving is inherent in the study of any geological discipline. Geological problems will be considered, discussed, and analyzed in this course.

**Computer Literacy:** Understanding computer technology by communication and accessing online course information, grades, discussion boards, and homework submissions is necessary.

**Evaluation of Students:** The final course grade will be determined on the basis of 75% from the lecture portion and 25% from the laboratory portion. The grade will be based on a weighted average of the following categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Laboratory Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Lecture Chapter Quizzes</td>
<td>30%</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*An additional 10 points may be earned for attending 100% of both the lecture and laboratory portions of the course.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90 and above</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>59 and below</td>
</tr>
</tbody>
</table>

**Course Schedule:** This class meets for 3 lecture hours.

**SCANS Information:** SCANS skills are taught and/or reinforced in energy/petroleum courses. The student must locate, read, interpret and understand instruction information and direction materials. The participant must communicate thoughts, ideas and information through verbal and written mediums. Practical arithmetic and mathematics will apply continually throughout energy/petroleum training. Listening, interpreting, and responding to verbal communications and instructions as well as speaking in response to questioning will be a daily involvement. Thinking, reasoning, visualizing and problem solving are required assets to the energy/petroleum field. The student/participant must display responsibility, self-management and honesty.
Students should feel free to contact the instructor at any time. Appointments are encouraged for advising and planning the most appropriate or beneficial course work.

*Syllabus subject to change as deemed necessary by the instructor to ensure learning objectives and course goals are met.

**Students with Disabilities:**
Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must place documentation on file with the Counselor/Disability Specialist. Students with disabilities should notify Midland College prior to the beginning of each semester. Student Services will provide each student with a letter outlining any reasonable accommodations. The student must present the letter to the instructor at the beginning of the semester.

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individuals have been designated to handle inquiries regarding the non-discrimination policies: **Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, tbaker@midland.edu; Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, nmorgan@midland.edu.** For further information on notice of non-discrimination, visit [http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm](http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm) or call 1 (800) 421-3481.

**Spanish**
Midland College no discrimina por motivos de raza, color, nacionalidad, sexo, discapacidad, o edad en sus programas o actividades. Las siguientes personas han sido designadas para responder a cualquier pregunta o duda sobre estas políticas no discriminatorias: **Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, tbaker@midland.edu; Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, nmorgan@midland.edu.** Para más información sobre estas políticas no discriminatorias, visite [http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm](http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm) o llame al 1 (800) 421-3481.