GEOLOGY 4332.001 –INTRODUCTION TO GEOPHYSICS  
Department of Physical and Environmental Sciences  
Fall 2015

A. COURSE INFORMATION

Course number/section: GEOL 4322.001  
Class meeting time: TR 12:30-1:45  
Class location: BH-202  
Course Website: Blackboard http://Bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: John K. Chesnut  
Office location: TBA  
Office hours: TBA  
Telephone: TBA  
e-mail: TBA  
Appointments: TBA

C. COURSE DESCRIPTION

Catalog Course Description
Introduction to quantitative techniques to assess physical properties and processes of the Earth. Topics include earthquake seismology, refraction and reflection seismology, gravimetry, magnetism, electrical methods, and radioactivity of Earth materials. Application of geophysical methods to the study of the Earth, in oil and gas exploration, and in economic and environmental geology.

D. PREREQUISITES AND COREQUISITES

Prerequisites
GEOL 4411 and PHYS 1401 or PHYS 2425, and PHYS 1402 or PHYS, 2426, and MATH 2413, or permission of instructor

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)  
Introduction to Geophysical Exploration, Author: Keary, Publisher: Wiley, ISBN# 9780632049295

Optional Textbook(s) or Other References
None
Supplies
Pencil, Paper, Calculator, Brain

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:
1. Explain and calculate earthquake seismology.
2. Explain and calculate seismic refraction.
3. Explain and calculate seismic reflection.
4. Explain and calculate earth gravimetry.
5. Explain and calculate earth magnetism.
6. Explain and calculate electrical methods.
7. Explain and calculate radioactivity of Earth materials.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
The main instructional method will be via in-class lecture. Homework exercises are intended to help students learn how to calculate geophysical problems.

H. MAJOR COURSE REQUIREMENTS AND GRADING
Student learning will be assessed via lecture Exams, Quizzes, and Homework.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>3 Exams (20%, 20%, 30%)</td>
<td>70%</td>
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<tr>
<td>Quizzes (6 total, equal weights)</td>
<td>20%</td>
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<tr>
<td>Homework (6 assignments, various weights)</td>
<td>10%</td>
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I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS</th>
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<tbody>
<tr>
<td>Week 1: 8/27</td>
<td>Course Introduction, Overview</td>
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<tr>
<td>Week 2: 9/1-9/3,</td>
<td>Geophysical Principles</td>
<td>1</td>
<td>Homework, Quiz</td>
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<tr>
<td>Week 3: 9/8-9/10</td>
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<td>Week 4: 9/15-9/17,</td>
<td>Data Processing</td>
<td>2</td>
<td>Homework, Quiz</td>
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<td>Week 5: 9/22-9/24</td>
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<tr>
<td>Week 6: 9/29-10/1,</td>
<td>Seismic Surveying</td>
<td>3</td>
<td>Exam 1 (9/29)</td>
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<td>Week 7: 10/6-10/8</td>
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<td>Week 8: 10/13-10/15</td>
<td>Seismic Reflection</td>
<td>4</td>
<td>Homework, Quiz</td>
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<tr>
<td>Week 9: 10/20-10/22</td>
<td>Seismic Refraction</td>
<td>5</td>
<td>Homework Quiz</td>
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<td>Week 10: 10/27-10/29</td>
<td>Gravimetry</td>
<td>6</td>
<td>Exam 2 (10/27)</td>
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<td>Week 11: 11/3-11/5</td>
<td>Earth Magnetism</td>
<td>7</td>
<td>Homework, Quiz</td>
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<tr>
<td>Week 12: 11/10-11/12</td>
<td>Electrical Methods</td>
<td>8</td>
<td>Homework, Quiz</td>
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<tr>
<td>Week 13: 11/17-11/19,</td>
<td>Radioactivity of Earth</td>
<td>10</td>
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<td>Week 14: 11/24</td>
<td>Minerals. No Class 11/26</td>
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<td>(Thanksgiving Break)</td>
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<td>Week 15: 12/1</td>
<td>Last Class Day - To Be</td>
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<td></td>
<td>Announced.</td>
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<td>Week 16: 12/8</td>
<td>Final Exam (Exam3)</td>
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<td>Exam 3</td>
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<td>Dec. 8, 2015, 11 am-1:30 pm</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

Attendance/Tardiness
Attendance will be taken. While attendance is not part of the course grade per se, regular student attendance at all lectures is expected and the attendance records will inform the instructor about student habits.

Late Work and Make-up Exams
Work is due by the stated deadlines. Occasionally unforeseen circumstances may prevent completion of work by the deadline; in that case students must contact the instructor in advance to request instructor approval to extend the deadline. The grade may be reduced on assignments submitted late without approval for an extension.
Extra Credit
There is a lot to geophysics; extra credit will be awarded for homework which shows effort that goes above and beyond what is taught in class.

Cell Phone Use
In general, cell phone use is not allowed in class. Please place your phone in vibrate mode so that unexpected calls do not disturb the lecture. However, please immediately communicate to the instructor any campus emergency messages broadcast via cell phone.

Laptop Use
Use of laptops will be allowed in class. Students are expected to take notes via pencil and paper, however laptops, tablets, or other electronic media are acceptable.

Food in Class
Food is not allowed in the classroom. Please eat before you enter the classroom.

Missed Exam
Exams and quizzes may be made up only in cases of an excused absence and students should contact the instructor in advance to make prior arrangement if possible. Excused absences include attendance at university-sanctioned athletic or academic events, illness (a doctor’s note or other documentation is required for absences lasting longer than two class days), student pregnancy-related issues, etc.

Participation
Your participation in this class is essential. While attendance and active participation are not part of the grade, they are necessary for success in meeting the course learning outcomes.

Other
Students are guided to do the following: Come to Class Prepared, Listen, Learn, Ask Questions, Study for Exams.

K. COLLEGE AND UNIVERSITY POLICIES
- Academic Integrity (University)
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.
• **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 instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

• **Statement of Civility**
Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

• **Deadline for Dropping a Course with a Grade of W (University)**
The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

• **Grade Appeals (College of Science and Engineering)**
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, 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 Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the
grade appeal process, students may contact the chair or director of the appropriate
department or school, the Office of the College of Science and Engineering Dean, or the
Office of the Provost.

- **Disability Services**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that
provides comprehensive civil rights protection for persons with disabilities. Among other
things, this legislation requires that all students with disabilities be guaranteed a learning
environment that provides for reasonable accommodation of their disabilities. If you
believe you have a disability requiring an accommodation, please call (361) 825-5816 or
visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access
issues in the classroom or on campus, please contact the Disability Services office
for assistance at (361) 825-5816.

[http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

- **Statement of Academic Continuity**
In the event of an unforeseen adverse event, such as a major hurricane and classes
could not be held on the campus of Texas A&M University–Corpus Christi;
this course would continue through the use of Blackboard and/or email. In addition,
the syllabus and class activities may be modified to allow continuation of the course.
Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be
operational within two days of the closing of the physical campus. However,
students need to make certain that the course instructor has a primary and a
secondary means of contacting each student.

L. **OTHER INFORMATION**

- **Academic Advising**
The College of Science & 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. Meetings are by appointment only; advisors do not take walk-ins.
Please call or stop by the Advising Center to check availability and schedule an
appointment. The College’s Academic Advising Center is located in Center for
Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**
I reserve the right to modify the information, schedule, assignments, deadlines, and course
policies in this syllabus if and when necessary. I will announce such changes in a timely
manner during regularly scheduled lecture periods.