Course Syllabus

Physical Geology

GEOL 1403

**Spring 2016 Physical Geology CRN 86376**

**Instructor Ricky Ferguson**

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**remind.com/join/ghk4d**

**Office Location and Hours: TBA**

**CE Learning Hub Sci Room 410 MW 5:30-9:30**

**Course Semester Credit Hours (SCH) (lecture, lab) If applicable**

Credit Hours: 4

Lecture Hours: 3

Laboratory Hours: 3

**Total Course Contact Hours**

96.00

**Course Length 12 Weeks**

**Type of Instruction**

Lecture/Lab

**Course Description:**

Introduction to the study of the materials and processes that have modified and shaped the surface and interior of Earth over time. These processes are described by theories based on experimental data and geologic data gathered from field observations. Laboratory activities will cover methods used to collect and analyze earth science data.

**Course Prerequisite(s)**

**FREQUENT REQUISITES**

* Qualify to take GUST 0342 (9th -11th Grade Reading) or higher – and –
* Qualify to take ENGL 0310 or 0349 or INRW 0420 – and –
* Qualify to take MATH 0312 (Intermediate Algebra) or higher

**Academic Program Learning Outcomes**

1. Students will recognize scientific and quantitative methods.

2. Students will evaluate the differences of scientific approaches and communicate these findings, analyses, and interpretations in oral and written communication.   
3. Students will demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, religion, and public policies.   
4. Students will demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.   
5. Students will identify and recognize the differences in competing scientific theories.

**Course Student Learning Outcomes (SLO):**

1. Describe how the scientific method has led to our current understanding of Earth’s structure and processes.   
2. Interpret the origin and distribution of minerals, rocks and geologic resources.   
3. Describe the theory of plate tectonics and its relationship to the formation and distribution of Earth’s crustal features.   
4. Quantify the rates of physical and chemical processes acting on Earth and how these processes fit into the context of geologic time.   
5. Communicate how surface processes are driven by interactions among Earth’s systems (e.g., the geosphere, hydrosphere, biosphere, and atmosphere).   
6. Identify and describe the internal structure and dynamics of Earth.   
7. Describe the interaction of humans with Earth (e.g., resource development or hazard assessment).   
8. (Lab) Classify rocks and minerals based on chemical composition, physical properties, and origin.   
9. (Lab) Apply knowledge of topographic maps to quantify geometrical aspects of topography.   
10. (Lab) Identify landforms on maps, diagrams, and/or photographs and explain the processes that created them.   
11. (Lab) Differentiate the types of plate boundaries and their associated features on maps and profiles and explain the processes that occur at each type of boundary.   
12. (Lab) Identify basic structural features on maps, block diagrams and cross sections and infer how they were created.   
13. (Lab) Demonstrate the collection, analysis, and reporting of data.

**Learning Objectives**

1.1. Defend or criticize the evidence for Plate Tectonics.

2.1 Compare the formation of igneous, sedimentary and metamorphic rocks

2.2 Explain distribution and formation of fossil fuel and mineral resources.

3.1. Identify the major physiographic features of the oceans and continents related to their plate tectonic setting

3.2. Sketch the different types of plate boundaries and label the features.

4.1 Evaluate the movement of the continents from the formation of Pangaea to present day positions.

4.2 Compare rates of geologic surface processes (e.g., rate of glacial retreat, erosion, coastal retreat)

5.1 Describe the combination of processes that shape landforms.

5.2 Evaluate how the biosphere affects rates of chemical weathering.

6.1 Draw and label a diagram of the interior of the earth.

6.2 Describe how Earth’s internal structure impacts plate motion.

7.1 Discuss human modification of Earth’s surface and how it contributes to geologic hazards (e.g., dams, highways, wetland development).

8.1. Identify a variety of common rock-forming minerals using physical properties.

8.2. Identify igneous, sedimentary and metamorphic rocks using texture and composition.

9.1. Read, interpret, analyze and understand topographic maps and geological profiles in terms of relief, contour intervals, and elevation.

9.2. Construct topographic maps with provided data.

10.1. Use various forms of technology (e.g., Google Earth, stereo photographs) to identify landforms.

11.1 Draw and label a profile of a subduction zone and a divergent boundary.

11.2 Identify the plate boundary types based on landforms seen on the map (e.g., offset rivers along transform fault)

12.1 Label and interpret folds and faults on geologic maps and cross-sections.

12.2 Interpret the geologic structures in relation to plate tectonic stresses.

13.1. Locate the epicenter of an earthquake by reading a seismogram.

**Core Curriculum Objectives:**

This course is in the Life and Physical Science Core Curriculum category and meets the objectives of Critical Thinking, Communication Skills, Empirical & Quantitative, and Teamwork.

**Course Calendar**



**Instructional Methods**

DE, requires students to attend lab sessions in person

Face to Face

**Student Assignments**

1. Learnsmart Modules are due every week and can be accessed through the online Connect.
2. Quizzes are given at the beginning of class and can NOT be made up if missed.
3. Tests are given every three book chapters and are announced in advanced.
4. The final exam will be comprehensive and will review the major concepts studied in class.

**Student Assessment(s)**

Reading for this course will consist of approximately 1-2 chapters per week. The reading is to be completed prior to the class meeting indicated on the schedule. You should plan to budget 8 to 12 hours per week outside of class meetings for reading and class preparation.

This course is a combined lecture / lab course. Each class meeting will consist of some combination of the two; please bring all materials to class each day.

**Lab Requirements:** Lab attendance is mandatory. Lab exercises and assignments are designed to complement the lecture and give you hands-on experience with the concepts covered in lecture. Thinking through and understanding lab assignments is a significant step toward learning the material. Collaborative group work is emphasized. You can learn from your classmates and them from you.

Lab assignments must be completed in class unless otherwise specified by the instructor. Some lab activities may be completed as homework. Laboratory exercises will include a combination of activities from the lab book and classroom-provided materials. All lab exercises are mandatory. You may work in groups to complete labs, but each student is responsible for submitting their lab assignment for “grading”. Grading will consist of marking the completion of the lab. Lab points will be awarded proportionately, meaning that if you turn in a completed lab, you will receive full credit. Half-done labs will receive half credit, and so on. The labs will not be graded as an assignment, in that sense the lab portion of the class is somewhat participatory. However, successful completion of the course requires full participation in the laboratory exercises. Some supplemental lab exercises will be provided, in addition to exercises in the lab book.

**Quizzes:** There will be frequent quizzes that cover material from the book and discussed in class. Quizzes will average about once per week, and usually will be given at the beginning of class. Come to class prepared and on time. Quizzes that are missed can NOT be made up. Homework will consist of reading the assigned chapter material prior to coming to class. Additional homework may be assigned and will be counted as part of Lab or Quiz portions of the grades. Homework is due on the assigned day and may not be turned in late without prior arrangement.

**Exams:** A total of 4 midterm exams are scheduled, consisting of a combination of objective questions, short answer/essay, definitions, drawing and labeling, and will include material from lecture, class discussions, reading, lab assignments as pertinent and any video presentations during class. No Make-up exams will be given except under very extenuating circumstances and by prior arrangement. All exams will begin at the beginning of the class period. Any make-up exam will be all essay. There will be a cumulative Final Exam for this course; it will be scheduled during the scheduled Final Exam.

***\*\*\*\*\*\*\*\*\*\*No electronic devices are allowed during quizzes or exams.*** \*\*\*\*\*\*\*\*. If you are found to have an electronic device during an exam, you will be asked to leave, and you will receive a grade of “0” for that assignment.

**Instructor's Requirements**

 All HCC policies regarding attendance, withdrawal, academic honesty, students with disabilities, grading, and student rights will be followed in this course. Refer to the syllabus section titled "Instructor's Requirements", "HCC Policy Statements", and "Grading" for more details, as well as the Student Handbook <http://www.hccs.edu/district/students/student-handbook/>

**Program/Discipline Requirements: If applicable**

**Lab Requirements**  
Lab attendance is mandatory. Lab exercises and assignments are designed to complement the lecture and give you hands-on experience with the concepts covered in lecture. Thinking through and understanding lab assignments is a big step toward learning the material. Collaborative group work is emphasized. You can learn from your classmates and them from you.

All HCC policies regarding attendance, withdrawal, academic honesty, students with disabilities, grading, and student rights will be followed in this course. Refer to syllabus section titled "Instructor's Requirements", "HCC Policy Statements", and "Grading" for more details as well as the Student Handbook <http://www.hccs.edu/district/students/student-handbook/>

**HCC Grading Scale:**

A = 100- 90: 4 points per semester hour

B = 89 - 80: 3 points per semester hour

C = 79 - 70: 2 points per semester hour

D = 69 - 60: 1 point per semester hour

59 and below = F 0 points per semester hour

FX (Failure due to non-attendance) 0 points per semester hour

IP (In Progress) 0 points per semester hour

W (Withdrawn) 0 points per semester hour

I (Incomplete) 0 points per semester hour

AUD (Audit) 0 points per semester hour

IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses.

FINAL GRADE OF FX: Students who stop attending class and do not withdraw themselves prior to the withdrawal deadline may either be dropped by their professor for excessive absences or be assigned the final grade of "FX" at the end of the semester. Students who stop attending classes will receive a grade of "FX", compared to an earned grade of "F" which is due to poor performance. Logging into a DE course without active participation is seen as non-attending. Please note that HCC will not disperse financial aid funding for students who have never attended class.

Students who receive financial aid but fail to attend class will be reported to the Department of Education and may have to pay back their aid. A grade of "FX" is treated exactly the same as a grade of "F" in terms of GPA, probation, suspension, and satisfactory academic progress.

To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA.

*Health Sciences Programs Grading Scales may differ from the approved HCC Grading Scale. For Health Sciences Programs Grading Scales, see the "Program Discipline Requirements" section of the Program's syllabi.*

**Instructor Grading Criteria**

 Exams= 40%

Quizzes= 20%

Labs= 20%

Online Modules =20%

**Instructional Materials**

**Textbook**: Exploring Geology, 4th ed., Reynolds et al., McGraw-Hill, 2016. ISBN 9781259292217 *(access code for Connect system) Once you log-in to the Connect system you have the option of ordering a loose-leaf copy of the book if you would like a hardcopy.* [*http://connect.mheducation.com/class/r-ferguson-spring-2016-central*](http://connect.mheducation.com/class/r-ferguson-spring-2016-central)

**Lab Book:** *Laboratory Manual in Physical Geology, 10th ed.,* edited by Busch, Prentice Hall, 2014 (ISBN 13-9780321944511).

**HCC Policy Statement:**

The Distance Education Student Handbook contains policies and procedures unique to the DE  student. Students should have reviewed the handbook as part of the mandatory orientation. It is the student's responsibility to be familiar with the handbook's contents. The handbook contains valuable information, answers, and resources, such as DE contacts, policies and procedures (how to drop, attendance requirements, etc.), student services (ADA, financial aid, degree planning, etc.), course information, testing procedures, technical support, and academic calendars.

Refer to the DE Student Handbook by visiting this link:

[DE Student Handbook](http://de.hccs.edu/media/houston-community-college/distance-education/student-services/HCC-Onlne-Student-Handbook.pdf)

Please familiarize yourself with campus policies in the HCC Student Handbook: <http://www.hccs.edu/district/students/student-handbook/>

***Student with Disabilities (ADA):*** HCCS is committed to compliance with the American with Disabilities Act and the Rehabilitation Act of 1973 (section 504)

***"Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. Faculty is authorized to provide only the accommodations requested by the Disability Support Services Office.***

***For questions, contact Donna Price at 713.718.5165 or the Disability Counselor at your college. To visit the ADA Web site, log on to www.hccs.edu, click Future Students, scroll down the page and click on the words Disability Information.”***

If you have any special needs or disabilities, which may affect your ability to succeed in college classes or participate in college programs/activities, please contact the office of disability support services at the college. Upon consultation and documentation, you will be provided with reasonable accommodations and/or modifications. Please contact the DSS office as soon as you begin the term. **Also visit the ADA web site at:** <http://www.hccs.edu/district/students/disability-services/>

***Academic Honesty:*** “Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the college system against a student accused of scholastic dishonesty. Penalties can include a grade of "0" or "F" on the particular assignment, failure in the course, academic probation, or even dismissal from the college. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.” **Cheating** includes looking at or copying from another student's exam, orally communicating or receiving answers during an exam, having another person take an exam or complete a project or assignment, using unauthorized notes, texts, or other materials for an exam, and obtaining or distributing an unauthorized copy of an exam or any part of an exam. **Plagiarism** means passing off as his/her own the ideas or writings of another (that is, without giving proper credit by documenting sources). Plagiarism includes submitting a paper, report or project that someone else has prepared, in whole or in part. **Collusion** is inappropriately collaborating on assignments designed to be completed independently. These definitions are not exhaustive. When there is clear evidence of cheating, plagiarism, collusion or misrepresentation, a faculty member will take disciplinary action including but not limited to: requiring the student to retake or resubmit an exam or assignment, assigning a grade of zero or "F" for an exam or an assignment; or assigning a grade of "F" for the course. Additional sanctions, including being withdrawn from the course/program or expelled from school, may be imposed on a student who violates the standards of academic integrity. See the [Student Handbook](http://www.hccs.edu/district/students/student-handbook/) for additional details.

***Attendance:***

You are expected to attend all lecture classes and labs regularly. You are also responsible for materials covered during your absences. Instructors may be willing to consult with you for make-up assignments, but it is your responsibility to contact the instructor. Class attendance is monitored daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences. *You may be dropped from a course after accumulating absences in excess of 12.5 percent of the total hours of instruction* (lecture and lab). For this 4 credit-hour lecture class meeting 6 hours per week, you can be dropped after 12 hours of absence.

***Withdrawal Policy:*** Please see the HCC website for withdrawal dates.

***The State of Texas imposes penalties on students who withdraw/drop courses excessively. Students are limited to no more than SIX total course withdrawals throughout their educational career at a Texas public college or university. Students are encouraged to review the*** [***HCC 6 Drop Policy***](http://imc02.hccs.edu/gcac/drop2.htm)***.***

***Students who repeat a course three or more times face significant tuition/fee increases at HCC and other Texas public colleges and universities.  If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test-taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.***

***Religious Holidays:*** If you observe a religious holiday and miss class, you must notify your instructor in writing two weeks in advance to arrange to take a test or make up an assignment. A religious holiday is “a holy day observed by a specific religion and the place of worship is exempt from property taxation under Section 11.20 of the Tax Code.”

***Policy on Electronic Devices:*** The use of electronic devices by students in the classroom is up to the discretion of the instructor. Any use of such devices for purposes other than student learning is strictly prohibited. If an instructor perceives such use as disruptive and/or inappropriate, the instructor has the right to terminate such use. If the behavior continues, the student may be subject to disciplinary action to include removal from the classroom or referral to the Dean of Student Services

Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office for Students with Disabilities for information regarding reasonable accommodations.

***HCC Sexual Harassment Policy and Title IX:*** HCC shall provide an educational, employment, and business environment free of sexual harassment. Sexual harassment is a form of sex discrimination that is not tolerated at HCC. Any student who feels that he or she is the victim of sexual harassment has the right to seek redress of the grievance. HCC provides procedures for reviewing and resolving such complaints through its Grievance Policy. Substantiated accusations may result in disciplinary action against the offender, up to and including termination of the employee or suspension of the student. In addition, complainants who make accusations of sexual harassment in bad faith may be subject to equivalent disciplinary action.

Title IX of the Education Amendments of 1972 requires that institutions have policies and procedures that protect students’ rights with regard to sex/gender discrimination. Information regarding these rights are on the HCC website under Students-Anti-discrimination. *Students who are pregnant and require accommodations should contact any of the ADA Counselors for assistance.*

It is important that every student understands and conforms to respectful behavior while at HCC. Sexual misconduct is not condoned and will be addressed promptly. Know your rights and how to avoid these difficult situations.

Log in to: [www.edurisksolutions.org](http://www.edurisksolutions.org/) . Sign in using your HCC student e-mail account, then go to the button at the top right that says **Login** and enter your student number.

**Student Rights and Responsibilities:**

<http://www.hccs.edu/district/about-us/policies/d-student-services/d4-student-rights--responsibilities/>

and in the Student Handbook

**EGLS3 -- Evaluation for Greater Learning Student Survey System**

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time near the end of the term, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and department chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.