Department of Natural Sciences
Geology
Course Syllabus
Physical Geology: GEOL 1403

Semester with CRN	**Spring 2017; CRN # 15795**
Instructor contact information	Dr. Atinuke Akingbade e-mail: atinuke.akingbade@hccs.edu (Preferred Contact) learning web: http://learning.hccs.edu/faculty/
Office Location and Hours	By appointment only. Please set up via email request to instructor Expect a response within 24 hours
Course Location/Times	HCC Stafford-Scarcella Center TuTh 6:00pm – 10:00pm, Feb 13 to May 14 2017
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	Hybrid: Lectures and Labs are Face to Face. Assignments and studies online

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)

- 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. Explain 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. Discuss 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) Examine 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) Describe the collection, analysis, and reporting of data.
14. Explain the origin and distribution of Earthquakes on the Earth's surface

Learning Objectives
1.1. Differentiate quantitative and qualitative scientific methods that led to our understanding of the Earth.
1.2. Describe how geology helps explain our world

2.1 Compare and contrast the formation of igneous, sedimentary and metamorphic rocks
2.2 Explain distribution and formation of fossil fuel and mineral resources.

3.1. Defend or criticize the evidence for Plate Tectonics
3.2. Identify the major physiographic features of the oceans and continents related to their plate tectonic setting
3.3. 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 Demonstrate standard scientific processes for collection, analysis and reporting of data.

14.1 Define Earthquakes and explain how they are formed and the various hazards associated with them
14.2 (Lab) Locate the epicenter of an earthquake by reading a seismogram.

Core Curriculum Objectives:
This course is in the Life and Physical Science Core Curriculum "functional component area" and meets the objectives of:

- **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Communication Skills** - to include effective development, interpretation and expression of ideas through written, oral and visual communication
- **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Course and Assignment Outline (TENTATIVE). Always check you announcements for updates to the course schedule

Week	**Text Chapters**	Lab Chapter	Activities and Assignments
1 **02/13-02/17**	In class Schedule (Text)	In class Schedule(Lab)	Must Be done BEFORE Class Due at 11.59 pm on due dates
TUE 02/14	Chapters1*:* Nature of Geology	1: Thinking like a Geologist	Learnsmart Chp.1: Mon 02/15 Reynolds HW1:
THU 02/16	Chapter 2 : investigating geologic questions	1: Thinking like a Geologist	Learnsmart Chapter 2-due 02/15 Reynolds HW 2
FRI 02/17	**Chapter Quiz**	**First week: All assignments due**	Chapter Quiz 1 and 2
2 **02/20-02/24**			Learnsmart Chp 3: Mon 02/20
TUE 02/21	Chapter 3: Plate tectonics.	2: Plate tectonics and origin of Magma	Take home
THU 02/23	Chapter 3: Plate tectonics.	2: Plate tectonics and origin of Magma	Reynolds HW3
FRI 02/24	**Chapter Quiz**	**Chapter Quiz**	Chapter 3
3 **02/27-03/03**			Learnsmart Chp 3: Mon 02/27
TUE 02/28	Chapter 4: Earth Material	3: Mineral property, identification and uses	Take home

Week	Text Chapters	Lab Chapter	Activities and Assignments
THU 03/02	Chapter 4: Earth Material	3: Mineral property, identification and uses	Reynolds HW4
FRI 03/03	**Chapter Quiz**	**Chapter Quiz**	Chapter 4
4 **03/06-03/10**			Exam 1 Reviews: Sun 03/05
TUE 03/07	Rock Cycle	Exam 1 and Lab exam 1 Reviews	
THU 03/09	**Exam 1 and Lab Exam 1**	4: Rock forming processes and Rock Cycle Lab	
FRI 03/10	**Chapter Quiz**	**Chapter Quiz**	Rock forming processes and Rock cycle
5 **03/13-0317**	Spring Break	Spring Break	Spring Break
TUE 03/14	Spring Break	Spring Break	Spring Break
THU 03/16	Spring Break	Spring Break	Spring Break
6 03/20-03/24			Learnsmart Chapter5: Mon03/27
TUE 03/21	Chapter 5: Igneous Environments	5: Igneous rocks and processes	Learnsmart Chapter6: Wed03/22
THU 03/23	Chapter 6: Volcanoes and volcanic hazard	5: Igneous rocks and processes	Reynolds HW 5 Reynolds HW6
FRI 03/24	**Chapter Quiz**	**Chapter Quiz**	Chapters 5 and 6
7 **03/27-03/31**			Learnsmart Chapter7: Mon03/27
TUE 03/28	Chapter7: Sedimentary Environments and rocks	6: Sedimentary processes, rocks	Reynolds HW 6
THU 03/30	Chapter7: Sedimentary Environments and rocks	6: Sedimentary processes, rocks	Reynold HW 6
FRI 03/31	**Chapter Quiz**	**Chapter Quiz**	Chapter 6
8 **04/03-04/07**			Learnsmart Chapter8: Mon04/03
TUE 04/04	Chapter 8: Deformation and Metamorphism	7: Metamorphic rocks processes and resources	Reynold HW 7
THUR 04/06	Chapter 8: Deformation and Metamorphism	7: Metamorphic rocks processes and resources	Reynold HW 7
FRI 04/07	**Chapter Quiz**	**Chapter Quiz**	Chapter 7
9 04/10-04/14			Exam 2 Reviews: Sun 04/09
TUE 04/11	**Exam 2 Reviews**	**Lab Exam 2 Reviews**	
THU 04/12	**Exam 1 and Lab Exam 1**	Comprehensive Overview/correction	
FRI 04/14	**Chapter Quiz**	**Chapter Quiz**	Comprehensive Quiz
10 **04/17-0421**			PreLabs: Mon04/17
TUE 04/18	Lab Chp 10: Geologic Structures, maps, and block diagrams	Lab Chp 10: Geologic Structures, maps, and block diagrams	Take home : maps and contouring
THU 04/20	Lab Chp 11: Topographic maps. Orth images	Lab Chp 11:: Topographic maps. Orth images	Take home: maps and contouring
FRI 04/21	**Chapter Quiz**	**Chapter Quiz**	Take home: maps and contouring
11 **04/24-04/28**			Learnsmart Chapter9: Mon04/24

Week	Text Chapters	Lab Chapter	Activities and Assignments
TUE 04/25 THU 04/27 FRI 04/28	Chapter 9: Geologic Time: Chapter 16: Rivers and Floods **Chapter Quiz**	8: Dating of Rocks, fossils and geological events 11: Stream Processes, Landscape and flood hazards **Chapter Quiz**	Learnsmart Chapt 16: Wed 04/26 Reynold HW 9 and 16 Chapters 9 and 16
12 **05/01-05/05**			Learnsmart Chapter12: Mon05/01
TUE 05/02 THU 05/04	Chapter 12: Earthquakes and Earth Interior Chapter 12: Earthquakes and Earth Interior	**Lab Earthquake** Final Exam Review	Take home Reynold HW 12
FRI 05/05	**Chapter Quiz**	**Chapter Quiz**	Chapter 12
FINAL EXAMS	**FINAL EXAMS WEEK**	**FINAL EXAMS WEEK**	**FINAL EXAMS WEEK**
TUE 05/09	**Comprehensive exam**	**Part 1 : Multiple Choices** **Part 2 : Drawing /written**	**05/09/ 2017 : 6pm- 7:50 pm**

Instructional Methods
Face to Face
Student Assignments
Students Assignments are a continuous assessment of understanding and comprehension of the materials being thought. All assignments will be done online, on CONNECT. Connect is the "virtual leaning and communication Hub" provided my Mcgraw Hill, publishers of your instructional text book.

This link https://connect.mheducation.com/class/d-akingbade-fall-2016- is provided for your connect registration.
Assignments are divided into three parts and will account for 30% of student's final

1) "LearnSmart": Pre-Chapter Reading and evaluation All LearnSmart assignments are due at 11.59 pm , at least a day before the chapter is scheduled to be discussed in in class on your syllabus
2) Post Chapter Assignments Are assigned after every chapter to evaluate students understanding and rea where help is required.
3) Other Homework and quizzes.

See Details below

The following lab exercises should be included in all GEOL 1403 sections. Instructors may spend more than one lab period on any of these topics. Instructors will include additional lab exercises on topics of their choice to complete the semester's lab hours. Instructors should also assess lab skills with one or more lab quizzes/exams.

1. Mineral Properties and Identification
2. Igneous Rock description and identification
3. Sedimentary Rock description and identification
4. Metamorphic Rock description and identification
5. Topographic maps
6. Plate tectonics (identifying and describe boundaries using maps and cross-sections)
7. Geologic structures (identify and interpret from maps, cross-sections & block diagrams)

Student Assessment(s)
Exams: There will be 2 exams each testing 3-4 chapters just completed and a comprehensive Final Exam. Please see below

Instructor's Requirements

Attendance: Perfect Attendance is expected and students are also expected to be on time for class. Lateness of more than 15 minutes is unacceptable and will be classified as an absence. Instructor will check attendance daily. No more than 2 excused absences will be accepted. Failure to keep this rule leads to student withdrawal from the course.

Course materials:

Students are expected to bring their personal copy of the recommended textbook and lab. Manual to class. Photocopies or any form of copies are not acceptable. This policy is non- negotiable.

Textbook:

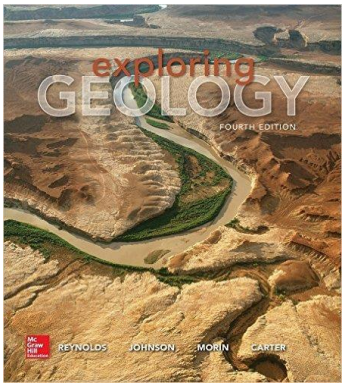
Lecture: Exploring Geology. 4th Edition: Raynolds, Johnson, Morin & Carter.

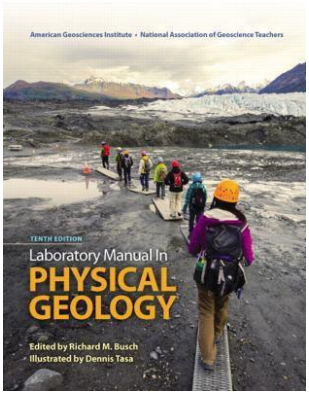
Lab. Manual:

Laboratory Manuel in Physical Geology, 10th Edition: Edited by R.M. Busch; Prentice-Hall publishers.

EACH STUDENT MUST HAVE HIS OWN LAB MANUAL. **COPIES ARE NOT ACCEPTED**.

Online Text/Assignments and quizzes on Connect





Classroom policy:

Food and drinks are strictly prohibited in the classrooms and labs.

The use of cell phones and other electrical gadgets is also strictly forbidden in this class. Students lack concentration while playing around with these gadgets. Students and instructors alike. When in class, students are expected to be attentive, with no distractions or disruptiveness from other students

You are able to use your phone outside the class or lab. **This classroom is a phone free zone,** phones cannot be used even during breaks or when class has not started. Kindly stay outside and finish your business on the phone before stepping into this class or lab.

Class cancellation notification. If the class has to be cancelled for any reason, students will be notified via e-mail. Always check you canvas inbox.

No sleeping in class and no heads on any desk or table.

There will be consequences for disrespect of rules, including but not limited to deduction of class participation points. Offending students may also be required to leave the class for the rest of the day. The classroom and labs are for INSTRUCTION AND LEARNING. If you are sick, please stay away for the safety of other students, otherwise you need to sit up in class and focus on what si being taught. Any sick student is expected to provide the instructor with a doctors excuse on return to class, for consideration for late assignments

Examination Policy:

Students will not be allowed to use the restrooms during an examination or quiz that is conducted in the class. Please ensure that restroom visits are done before coming in to sit for an exam. If a student leaves the examination room for any reason, such student will not be allowed to continue writing that exam should they return to the exam room.

Lab Requirements

Lab attendance is mandatory. The lab exercises and assessments will be 25% of the course grade. 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. Team work irrespective of differences is nonnegotiable in real life work places. It is expected that students start to build some professionalism even from college.

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:

The HCC grading scale is:

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
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. 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.

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.

Instructor Grading Criteria

	Details	Points	Total Points	Final Percent (%)
Assignments	**LearnSmart (Connect)**	**100**	**300**	**30**
	Reynolds Post Chapter homework	**100**		
	Quizzes	**100**		
Labs	**Lab Exam 1: Mineral Identification**	**75**	**250**	**25**
	Lab Exam 2: Rock Identification	**75**		
	Weekly Lab Assignments	**100**		
Class Participation	**Contributions in Class**	**50**	**50**	**5**
Exams	**Exam 1**	**100**		

	Exam 2	**100**	**200**	**20**
Final Exam	**Comprehensive**	**200**	**200**	**20**
Grand Total		**1000**	**1000**	**100**

HCC Policy Statement:
Please familiarize yourself with campus policies in the HCC Student Handbook for topics including: ADA (students with disabilities), Scholastic Dishonesty, General Student Attendance, Repeating courses, Electronic Devices in class, Threatening Behavior, Religious Holidays, withdrawal deadline and mores: http://www.hccs.edu/district/students/student-handbook/

Student with Disabilities (ADA):
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.
http://www.hccs.edu/district/students/disability-services/ada-counselors/

Central College
713.718.6164
Coleman College
713-718-7376
Northeast College
713-718-8322
Northwest College
713-718-5667
713-718-5408
Southeast College
713-718-7053
Southwest College
713-718-7909
Adaptive Equipment/Assistive Technology
713-718-6629
713-718-5604
Interpreting and CART services
713-718-6333

Withdrawal Policy:
The withdrawal deadline is APRIL 14 2017 for all second start classes. Please see the school calendar at http://www.hccs.edu/district/events-calendar/academic-calendar/

HCC Sexual Harassment Policy and Title IX: *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 is 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.*
Log in to http://www.eduriskssolutions.org. Sign in using your HCC student email account, and then go to the button at the top right that says ***Login*** *and enter your student number.*

$EGLS_3$ -- 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.