

**Patrick Henry Community College**

GOL-105 **(Physical Geology)**

Fall, 2011 Mrs. Brett Dooley

**OFFICE LOCATION:** I do not have an office. Email to make arrangements to meet at times other than before or after class.

**OFFICE HOURS:** Since I don’t have an office, I don’t have set hours. I am always happy to schedule a time to meet. Otherwise I will be in the classroom or the biology workroom about an hour before class starts. I can stay after class to meet as well.

**OFFICE PHONE:** I don’t have a campus phone, so please email or call Regina Warren at (276) 656-0209 and leave a message, or email me directly.

**E-MAIL ADDRESS:** bdooley5001@email.vccs.edu

**INSTRUCTOR’S WEBPAGE**: http://web.me.com/sciencegal/dooleyclasses/Welcome.html

**CLASS MEETING TIME:** 1:00-3:50 Tuesday and Thursday

**CLASSROOM LOCATION:** Tuesday – Walker 139, ThursdayWest 205

**COURSE CREDITS:** 4

**PREREQUISITE(S):** ENG-03, ENG-05

**COURSE DESCRIPTION**

Introduces the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and crustal deformation.

**COURSE INTRODUCTION**

Geology is, in its broadest sense, the study of the earth- how it came to be, what processes affect it, what we can learn about the Earth’s past through studying evidence present today, and how we can make inferences about the future from knowledge gained of the planet’s past. The course provides a framework of broad ideas, which will help the student develop an understanding of the complexity of the world around him/her. Whether it is understanding why Chile was affected by a series of earthquakes, what all the global warming studies mean, or why the shape of one’s own backyard changes over time, geology affects everyone constantly. Students enrolled in this course will enjoy the hands-on nature of the labs and especially the local field trips. To begin to learn about rocks and then see your hometown with keener eyes is always exciting. Students should possess the writing skills to answer questions with complete sentences as well as be able to compose an essay with APA citations. Students should have the computer savvy to check both their email and Blackboard account, surf the web, compose essays in Microsoft Word (or similar software), and prepare presentations in Microsoft PowerPoint (or similar software).

**A. COURSE OBJECTIVES**

The course is subdivided into four modules: Earth materials, Earth deformation, Surface and near surface processes, and Climate change.

Earth materials module: the student will explain the basic tenets of geology including how rocks form, how to differentiate between types of rocks using geological terminology, use this information to analyze how differences in rock and mineral properties affect how they are used.

Earth deformation module: the student will be able to explain plate tectonics and to describe the many lines of evidence that ultimately led to geologists understanding of the complex process. As a component of this students will be able to describe the basic composition of the Earth.

Surface and near surface processes module: the student will be able to describe: groundwater in terms of water tables, aquifers, and karst features, surface water in terms of stream formation and types of stream features, and glacial features. Student will evaluate how the nature of water flow affects human society in terms of natural disasters such as floods, debris/mudflows, avalanches, and rock falls.

Climate change module: the student will read both scientific and government papers to understand the issue of global warming. Students will describe the lines of evidence used to support this timely issue and look at climate change deniers to evaluate the evidence put forth by both groups. Students will compose an essay synthesizing multiple lines of evidence to explain what is happening, the potential impact on human society, and what we can do to cope with the coming changes both as individuals and a society.

For all modules, students will be able to apply geologic knowledge by solving problems, and evaluating the factors affecting the earth's past, present, and future.

**B. VCCS CORE COMPETENCIES**

The core competencies addressed in this course are:

1. Communication

 **1.2** assimilate, organize, develop, and present an idea formally and informally;

 **1.3** use standard English;

2. Critical Thinking

**2.1** discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data;

 **2.3** evaluate the strengths and relevance of arguments on a particular question or issue;

**2.4** weigh evidence and decide if generalizations or conclusions based on the given data are warranted;

**2.5** determine whether certain conclusions or consequences are supported by the information provided; and

 **2.6** use problem solving skills

4. Information Literacy

**4.4** use information effectively, individually or as a member of a group, to accomplish a specific purpose

6. Quantitative Reasoning

**6.3** interpret mathematical models such as graphs, tables and schematics and draw inferences from them;

**6.4** use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;

7. Scientific Reasoning

**7.1** generate an empirically evidenced and logical argument;

 **7.2** distinguish a scientific argument from a non-scientific argument;

 **7.3** reason by deduction, induction and analogy;

 **7.4** distinguish between causal and correlational relationships; and

**C. METHOD OF INSTRUCTION**

This class will be conducted using the following methodologies:

* Lectures
* Discussions
* Labs (to include collaborative learning)
* Field trips
* Guided research projects (to include collaborative learning and writing)

**D. TEXTBOOK(S) AND REQUIRED TOOLS OR SUPPLIES**

**Title**: The Changing Earth: Exploring Geology and Evolution, 5th Edition

**Authors:** James S. Monroe; Reed Wicander

ISBN: 10: 0-495-55480-4 or 13: 978-0-495-55480-6

**Title**: Global Climate Change Impacts in the United States

**Editors**: Thomas R. Karl, Jerry M. Melillo; Susan J. Hassol

ISBN-13: 9780521144070 (You can find it for about $50 or download a free pdf from the link is below.)

Free download: <http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/download-the-report>

**Supplies:** pencils for labs to be brought each day, lab notebook, class-notebook (or section of a binder), shoes that can get muddy (preferably hiking boots)

**Optional supplies:** digital camera for use on field trips

**E. STUDENT EVALUATION**

|  |  |
| --- | --- |
| Component of class | Percent of grade |
| Attendance | 5 |
| Cell phone policy | 5 |
| The Math You Need | 5 |
| Labs/Discussions/Participation | 25 |
| Projects/Field trip essays | 25 |
| Tests/Quizzes | 35 |

**Attendance**: You receive a percent grade for the number of classes attended. You must show up on time for attendance to count. There are 30 class sessions, so if you miss 6 you get a 4 on your attendance grade. (Of course you will also have missed a significant portion of class sessions, which will affect other areas.)

**Cell phone policy**: Cell phones should not be used at any point during class time. If you need to use a calculator, bring a dedicated calculator, or I will provide them. Each time I see your phone, or see you texting in your lap, you lose a point. You may lose up to half a letter grade in this manner and these are the last points from your grade. In other words, you may not make up these points. For specific emergencies see me prior to class.

**The Math You Need**: We are incorporating a math support program into the course. The intent of this is to provide you will tutorials on key math concepts prior to their use in labs. These are all highly valuable skills, most of which you will see in other classes, and all of which you will see multiple times in this course. All but the first assignment will be done outside of class, but quizzes and tests will incorporate similar questions. The tutorials include a written explanation, sample problems, and support web sites you can visit for additional assistance. Each module will end with a mandatory quiz (reflected in the 5% of your grade). You may take the quizzes as many times as you would like until you get a 100% if you choose to do so. Again, all of this content will be in your labs and in your quizzes and tests, so you do NOT want to skip it.

**Discussions/Participation**: You need to take an active part in classes by either asking or answering questions, being a willing participant in both group and individual assignments. You should speak in class (with an answer or question) at least once each class period.

**Labs**: You must be present for labs, and should therefore try to be in class everyday. Labs cannot be made up, but I will drop the lowest lab grade, since sometimes life does get in the way.

**Project and Field Trip Essays**: There will be a rubric provided with specific grading criteria for each assignment.

**Test/Quizzes**: You will have between 2 and 4 tests. They will be announced in advance and will range from 25 – 50 questions. They will have some combination of multiple choice, matching, labeling, and short answer. They may be given on Blackboard or on paper and may be done outside of class time. Quizzes may be either announced or unannounced. They will range from 5 – 10 questions, take any format and will be done during class.

**Late** **assignments:** No assignments will be given out or accepted late unless I was informed of a valid reason prior to missing the due date. If you will miss class, send me an email or call Regina to inform me of the absence and the reason before the start of the class. No assignments will be accepted after other students have received back that assignment.

**Extra credit**: Extra credit will be given to the entire class or not at all. I do not give extra credit at the end of the term for people who’ve missed assignments. Extra credit will frequently be included within tests as bonus questions. If local activities present themselves (such as a lecture at the museum or a natural disaster about which we can have a project) it will be offered to the entire class.

**Posting grades**: As we will meet twice a week, I will give you grades in class. If an assignment is given within Blackboard, the grade will be posted in Blackboard, otherwise you’ll get all grades in class. I will not give your grade to any other person (spouse, parent, sibling) and will only email grades to your Patrick Henry Gmail account.

**Incompletes:** I generally only give an “I” on the basis of a family crisis or medical emergency which arises after the last day to withdraw.

**F. GRADING SCALE:**

 **A** 90 - 100

 **B** 80 - 89

 **C** 70 - 79

 **D** 60 – 69

 **F** 59 – below

**G. EXPECTATIONS FOR STUDENT SUCCESS**

**Homework policy**: Homework is due at the start of class. Late homework will not be accepted without advanced notice. All homework should be written in standard English. For all assignments that require writing, writing should be in complete sentences. A word processor should be used and assignments should be taken to the Writing Center if you question your writing abilities.

**Attendance policy**: Students should be on time to all classes. You will be counted as not present if you are more than 10 minutes late or leave more than 10 minutes before dismissal. On some occasions, of which you will be informed in advance, we will have field trips. On those days, we will plan to leave exactly at the start of class. If you are late we may leave without you. Inform me at the start of class if there is some reason you may be chronically late to class so arrangements can be made.

**Make up work**: It is the student’s responsibility to make arrangements for missing work. Labs may not be made up unless it was an online lab. Make up work will not be permitted if I was not informed in advance of the absence. This goes for tests as well. No make up work will be permitted after assignments have been returned to other students.

**Use of electronic devices**: There should be no cell phones out during class, and absolutely no texting during class. Unless students have informed me of a specific reason he/she may need to use the phone during class, no calls should be taken or texts answered. Calculators may be used if necessary, but you should not use the calculator on the cell phone. Phones should be in bags or pockets throughout class.

**Food/Drink**: Drinks are permitted if they are in a re-sealable container. Food should be kept away from lab materials, should not have a potent smell, and should be such that it will not leave a mess.

**Courtesy and language**: Be respectful to yourself and others throughout class. Any language that would be edited by public television is inappropriate for class. We live in a multicultural society, and while we have the right of self-expression, please refrain from language or attitudes that may offend others as it will distract from class-time.

**Time management**: Leave yourself more time than you anticipate needing to complete assignments. Geology is a wonderful topic, but one that brings a novel approach for many people in terms of how they interact with the world. It can be hard to get your words down and there is quite a bit of vocabulary. Plan to start assignments within a day of when they are assigned. Begin studying for tests as soon as they are announced. Study groups are often the best way to study.

**H. EMERGENCY INFORMATION**

The evacuation poster should be near the door. From West 208 we should turn left and leave through the doors in event of fire. We should turn right and go down the jog to the stairwell leading to the basement in event of a tornado. The door will be locked in the event of a building threat.

**I. STUDENT SUPPORT/DISABILITY STATEMENT:**

Patrick Henry Community College makes every effort to accommodate individuals with disabilities for all programs, services, and activities available to the public. If you have accommodation needs, please contact the 504/ADA Coordinator (276-656-0257 v/tdd, 800-232-7997 ext. 0257 v/tdd, sguebert@ph.vccs.edu) within 14 working days prior to attending a scheduled event. Sign language interpreter requests must be made at least 4 weeks prior to attending a scheduled event.

**J. IMPORTANT DATES TO REMEMBER:**

|  |  |
| --- | --- |
| Aug 29 , 2011    | **Last Day to Register or Add a Course**  |
| Sep 5 , 2011   | **Holiday (college closed)**  |
| Sep 8 , 2011   | **Last day to drop a course to receive a refund**  |
| Oct 24 -Nov 4, 2011  | **Faculty administer student evaluations**  |
| Oct 31, 2011    | **Last day to drop a course without grade penalty or change from credit to audit**  |
| Nov 15, 2011   | **Faculty In-service/Advising & Registration for Spring 2011 (no classes)**  |
| Nov 23, 2011    | **Faculty In-service/Advising & Registration (no classes)**  |
| Nov 24 -25, 2011    | **Thanksgiving Holiday** College is closed. No classes. |
| Dec 9 , 2011   | **Last Day of Classes** |
| Dec 12 -16, 2010    | **Exams**  |

**K. SPECIFIC COLLEGE POLICIES**

College policies can be found at: [http://fpwww.ph.vccs.edu/bbsupport/syllabusinfo/syllabusinfo.htm#academic](http://fpwww.ph.vccs.edu/bbsupport/syllabusinfo/syllabusinfo.htm%22%20%5Cl%20%22academic)

**L: Other**

Tentative Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week | Date | Module | Chapter | content |
| 1 | Aug 23; Aug 25 | EARTH MATERIALS | 3 | Syllabus (M-UC in class); minerals (M-G) |
| 2 | Aug 30; Sep 1 |  | 4,7; 6 | Igneous/metamorphic rocks (M-D,GV); Sedimentary rocks |
| 3 | Sep 6; Sep 8 |  |  |  Rock test/lab practical |
| 4 | Sep 13; Sep 15 |  | 17 | Rock dating (M-R;UCV)\*; Maps (M-TM) |
| 5 | Sep 20; Sep 22 |  |  | Field trip; paper |
| 6 | Sep 27; Sep 29 | EARTH DEFORMATION | 2, 10 | Tectonics (M-R); Structures\* |
| 7 | Oct 4; Oct 6 |  | 5, 8, 10 | Earthquakes (M-G2;TMV)\*, mountains, volcanoes; project |
| 8 | Oct 11; Oct 13 |  |  | Test review; test |
| 9 | Oct 18; Oct 20 | SURFACE AND NEAR SURFACE PROCESSES | 13 | Groundwater; field trip |
| 10 | Oct 25; Oct 27 |  | 11;12 | Slopes (M-S); rivers\* |
| 11 | Nov 1; Nov 3 |  | 14; 16 | Glaciers\*; coasts\* |
| 12 | Nov 8; Nov 10 |  |  | Tsunami; projects\* |
| 13 | Nov 15; Nov 17 |  |  | Economic geology; field trip |
| 14 | Nov 22; Nov 24 | CLIMATE CHANGE |  | Field trip; THANKSGIVING |
| 15 | Nov 29; Dec 1 |  |  | Climate change\*; present projects\* |
| 16 | Dec 6; Dec 8 |  |  | Test review; Final\*\* |

\* Laptops used. You’re welcome (even encouraged) to bring your own WiFi ready laptop.

\*\* Final may be moved into exam days if necessary.

(M)- A The Math You Need module is due this day. Modules are due by the start of class time.

UC- [Unit Conversion](http://serc.carleton.edu/mathyouneed/units/)

D- [Density](http://serc.carleton.edu/mathyouneed/density/index.html)

G- [Graphing](http://serc.carleton.edu/mathyouneed/graphing/index.html) – G2 [How do I read a point under a curve](http://serc.carleton.edu/mathyouneed/graphing/interpret.html)

TM- [Topographic Map](http://serc.carleton.edu/mathyouneed/slope/index.html)

S- [Slopes](http://serc.carleton.edu/mathyouneed/slope/slopes.html)

V- Review

**M. AFFIDAVIT**
My signature below indicates that I have read and understand this syllabus and have been given a copy of my own to keep.

Student Signature

Date

**This syllabus conforms to the Patrick Henry Community College syllabus guidelines.**